

DOCUMENT RESUME

ED 079 957

EM 011 280

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TITLE Individualized Instruction Demonstration Project.
Final Evaluation Report.
INSTITUTION Urbana School District 116, Ill.
SPONS AGENCY Bureau of Elementary and Secondary Education
(DHEW/OE), Washington, D.C.
REPORT NO DPSC-67-4439
PUB DATE 25 Sep 70
NOTE 98p.

EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Academic Achievement; *Behavior Change;
*Demonstration Projects; *Elementary Grades;
*Individualized Instruction; Mathematics; Positive
Reinforcement; Program Descriptions; *Program
Evaluation; Reading

IDENTIFIERS Elementary Secondary Education Act Title III; ESEA
Title III; Illinois; Prairie Elementary School;
Urbana

ABSTRACT

This report summarizes the efforts of a demonstration project at Prairie Elementary School in Urbana, Illinois to implement individualized reading and mathematics programs and to introduce the systematic application of behavior modification principles in the classroom. It describes the development, implementation, and revision of Individually Prescribed Instructional (IPI) programs and discusses the strategies of behavior modification, particularly positive reinforcement, relating to effective control of the behavior of both the minority of problem students and the majority of well behaved pupils. Several appendixes provide data on student achievement in reading and math, behavior modification, classroom and non-classroom discipline, publicity about the project, and kindergarten achievement data. (PB)

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F I N A L
E V A L U A T I O N R E P O R T

INDIVIDUALIZED INSTRUCTION

DEMONSTRATION PROJECT

PRAIRIE SCHOOL

URBANA, ILLINOIS

DISTRICT 116

R. BRAUN, SUPERINTENDENT

D. HOLSTE, PRINCIPAL

PREPARED & SUBMITTED

by

DAVE PHILLIPS, PROGRAM SUPERVISOR

Sept. 25, 1970

TITLE III P. L. 89-10
Individualized Instruction
Demonstration Project No. 4439
Donald Holste, Director
Prairie School, Urbana, Ill.

This Project Funded
by
U.S.O.E. under Title III E.S.E.A.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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TITLE III
FINAL EVALUATION REPORT

JULY 1970

SECTION I

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EXPLANATION

Directions for the final report indicate it is to cover the entire 3 years of the project. The objectives of the project have been modified slightly from the initial proposal. The major changes have been from working originally in one pilot classroom to working in an entire elementary school. Secondly, a shift from the development of problem solving skills in children to the implementation of individualized reading and math programs. This was the result of scope of the task being larger than the Title III staff could deal with. The implementation of individualized materials thru-out an entire elementary school and the in-service training connected with it was a higher order objective.

A. Initial Major Project Objectives

1. The implementation of individualized instructional materials thru-out Prairie Elementary School in the areas of Reading and Math.

This objective has been completely realized. Approximately seven hundred and thirty-five children in grades K thru 6 are currently using completely individualized math and reading programs. The 1970 Individually Prescribed Instruction Math Program published by Appleton-Century-Crofts is being used

from grades 1 thru 6. Kindergarten uses a specially prepared math program developed by this project. This program leads the pupils into the IPI math program.

The reading program consists of a specially devised kindergarten program prepared by this project this program leads the pupils into the second phase of the reading program which is the McGraw Hill Programmed Readers. These are used beginning in the first grade and proceeding until each student completes the series, regardless of the grade placement. Each pupil proceeds at his own rate. Typically in the third grade the pupils complete this portion of the reading program. The next (3rd) phase of the program is the IPI reading portion. This is composed of an independent reading portion and a skill development aspect. Both areas continue thru-out the 6th grade.

All children in Prairie Elementary School are in the preceding math and reading program.

OBJECTIVE 2: The systematic application of Behavioral Principles in the classroom. This objective has been met, but is more difficult to translate into objective terms and quantify. All of Prairie School's Teachers K thru 6 (24) plus special education teachers and aides have been exposed to these techniques either formally in a Behavior Modification Seminar conducted by David Phillips, project supervisor or more informal on-the-job training in their own classrooms. The

Title III project staff has worked to varying degrees in all classrooms. Special interest centered around the use of these techniques in the special education classes.

SECTION II

Effect of the Project on the Clientele

OBJECTIVE I: The implementation of an individualized reading and math curriculum in grades K thru 6; the technique used for the evaluation of this objective is straight forward counting the number of pupils who are in the reading and math programs. All students in Prairie School are in the program.

In addition measures of pupil progress are included for all grade levels. In no case were standardized achievement test results stressed. An item analysis of the most widely used tests revealed that these are not valid for content taught in this program and more importantly the curriculum contains its own built in progress measures which are a much better measure of success in this program. See Appendix 1 and 1A for a summary of student progress, Appendix 6 for kindergarten.

OBJECTIVE II: The systematic application of behavioral principles in the classroom. This objective has no direct measures. All of the teachers in Prairie School have been exposed to

behavioral principles in a formal seminar or on-the-job Training. The most satisfactory measure is of course a measure of the behavior of the children as this is the reason for the training. At Prairie School during the years proceeding the Title III Project discipline cases were a major problem. The training of the teachers in the principles of behavior has allowed the classroom teachers to deal with most problems successfully and to substantially reduce their occurrence. This was in fact successful enough to allow us to place all of the "special education" pupils back in the regular classes. This was accomplished with great success. This is an indication of the efficiency of the procedures and the achievement of this objective. See appendix 2 for some of the case studies conducted by the teachers in connection with their training in the application of behavioral principles.

CURRENT OBJECTIVES

The current year (1969-70) objectives and results are as follows:

The specific objectives for the 1969-70 school year were to:

1. Expand the use of individualized materials in language and math to 4th, 5th, and 6th grades - thus including all children (approximately 730) in Prairie School in the materials

2. Train the new teachers in the use of I.P.I. materials
3. Train the new teachers in the use of behavioral principles
4. Maintain services for teachers requesting assistance with classroom management problems
5. Expand the student supportive services (tutoring center) to deal with all primary children showing academic difficulties in connection with handling all special education children in the regular classrooms

EXPANDING INDIVIDUALIZED MATERIALS

The use of I.P.I. mathematics program (the 1970 Appleton-Century-Crofts version) was increased to include the upper primary students. This plan began at the beginning of the school year and has developed throughout the year. It was new to both teachers and students. Placement testing was the first task. This information is critical in placing every child at the correct place in the I.P.I. program. As soon as the testing was concluded, prescriptions were written.

The major problems encountered were the result of the teachers being new to the system. The I.P.I. training session conducted before school began could not possibly cover the many problems the teachers would have initially. Fortunately the I.P.I. head clerk was

experienced and functioned as a consultant to the teachers. This service turned out to be invaluable. The lower primary grades continued as in the previous year with the exception that all third grade classes are now included in the program.

REVISING I.P.I. MATERIALS

In an effort to alleviate problems in the program, (both reading and math) revisions were made on the basis of teacher and student feedback. Those skills where students experienced undue difficulty were revised as much as time permitted. A systematic record was kept on program errors and problems so that this information might be utilized to improve the program.

I.P.I. Language Program - The I.P.I. Language Program as used at Prairie School uses the McGraw-Hill Programmed Readers exclusively in the beginning phase. When the student completed book 14, he was then placed in the "Transition Phase". This is a series of 40 paperback books. The teacher selects books from this series for the child to read concurrently while completing books 15 through 21 in the McGraw-Hill Programmed Reader. At the completion of Book 21 the student enters the independent reading phase and is placed into appropriate level of the I.P.I. Language Skills. The student typically complete the McGraw-Hill Programmed series in the 3rd grade. Of course, an individualized system such as this there is much variance and some children may complete

the McGraw-Hill series in the second grade or it may not until the 4th grade.

Currently the I.P.I. language program is undergoing a revision by two of the Prairie teachers who are basing changes on the problems encountered during this past year.

Data in graphic form was kept on all children as to specific unit mastery and this chart was updated on a weekly basis. This allowed anyone at a glance to see the specific progress of any child and served as a very useful feedback to the teachers.

BEHAVIOR MODIFICATION PROGRAM

Prairie school teachers have been consistently using more and more behavioral techniques in the classroom to handle behavior problems and to motivate students. The adoption of these techniques is partly a result of direct training of the teachers in a Behavior Modification Seminar conducted by Dave Phillips, Project Supervisor, and by word of mouth among themselves. In some cases, more experienced teachers have gone into the classrooms of those having problems and acting as behavioral consultants, suggested new techniques. During the past year approximately 55 teachers in the Urbana School District have taken the seminar. The seminar uses a programmed approach and involves the teachers in several actual case studies. The results have been encouraging thus far. There is still the question as to the most efficient means of changing a teacher's classroom techniques. There is very little information available on this topic and thus we have been developing the program as we have proceeded. It appears

now that one of the best ways to "teach" teachers is to use other teachers (peers) as the instructor. (See appendix 2 for reports from teachers who changed the behavior of problem students in their classes.)

Several other behavioral programs were initiated during the year as the need arose. The ready application of behavioral principles to a variety of problems is demonstrated by the lunch room incentive system.

During the first 4 months of school the usual lunch room procedures were used in an effort to control the behavior of the children eating. Approximately 250 children eat simultaneously at long tables and the noise and behavior problems grew steadily. The lunch room monitors nagged and scolded for infractions and finally removed gross offenders. This was not working.

A program was set up whereby the children were reinforced for appropriate behavior and the results were dramatic and sudden. Observational data on the frequency of occurrence of infractions of the rules (1) we speak in normal tones; (2) we are seated when eating and (3) we keep our hands to ourselves) was recorded before the program. With implementation of the program observations were continued so that its effectiveness could be evaluated. Lunch room monitors were instructed to stop all reprimands and instead dispense small blue pieces of paper to those children eating appropriately. We wanted to reinforce appropriate behavior. The child was to place this token in front of his tray and leave it alone. Pleading

one of the 3 rules above resulted in the loss of the piece of blue paper. It could be re-earned by more appropriate behavior. Following lunch those children with the paper slip exchanged it for a plastic token which could be used the following lunch for the choice of chocolate milk over regular milk. The kids still had to buy the milk, it merely gave them the choice of white or chocolate. Or, one could save 10 tokens and turn them in for a candy bar following lunch.

The program worked and the frequency of problem behavior reduced immediately. See table 4 for these results.

SPECIAL EDUCATION PROGRAM

There were 77 children in Prairie School who had been classified as Types A, B, C, or EMI. In addition, there were students transferred to Prairie School because their former schools felt they could be handled more successfully here. All of these students were placed in regular classrooms appropriate for their age. Some of these "special education" students received special academic tutoring, (as did any child needing it). The regular classroom teachers were able to deal with these "problem" students very successfully.

It goes without saying that these students were more difficult for the teacher to handle than the more typical students. The teachers were given assistance as requested in dealing with these students. This assistance was in the form of advice and demonstrations of

teaching and classroom management techniques by the Title III staff. This is not to say these special education students never caused any problems. From time to time they would cause classroom problems, but the teacher had specific programs to deal with them. All teachers could refer any child out of their room for a brief period of isolation from their peers. This has been called "time out". The purpose is to remove the offending student from all sources of attention for the objectionable behavior. This technique was to be used if a child was likely to hurt someone else, himself, or disrupt the entire classroom. The Title III staff managed this operation. The teacher would page the office which would notify the Title III office which would send someone to get the child out of the room and bring him to the I.P.E. work room where the child would be supervised and made to remain until he was quiet for a given amount of time. This time varied according to the individual child and his behaviour. Data was kept on all children that were referred for this purpose.

This system was set up to deal with severe problem children and it should be noted that there were only 8 children in a school of over 700 that were timed out more than twice (see appendix 3 for this data).

This turned out to be an extremely effective technique for dealing with problem behavior and much more humane than standard forms of punishment. As indicated above, there were only 8 children who had to be timed out

more than 3 times. This indicates several things, one is the fact that the teachers had fewer problems, the effectiveness of the technique and a general attitude among the teachers that they could effectively deal with the problem children. It was also clear that time out is ineffective if the classroom was not a positive environment in which to be.

The main classroom management technique used by teachers is simply giving their positive attention to the students who are behaving appropriately and remove attention from misbehaving students. This very simple procedure is the basis for a good positive classroom environment which will maximize the opportunity for learning. There are of course, special classroom problems that required special motivation systems. These systems were set up primarily by the teachers with the assistance of the Title III staff. (See Appendix 2 for some of these case studies.)

The academic progress made by the "special education" students in regular classrooms is shown in Appendix 1A. As expected there are great individual differences in the gains made. Many of these students who began the year far behind their classmates finished the year in the median range for their class. In most cases the individual progress in the reading and math programs was substantial. It is difficult if not impossible to equate the gains made in the I.P.I. program with standardized achievement test gains because the I.P.I. program is not teaching the

content being tested in all cases and the students have not been in the program long enough.

PEER TUTOR PROGRAM

In an effort to provide K, 1st, and 2nd grade teachers with more assistance while their students were using the individualized reading and math programs, tutors from the 5th and 6th grades were used.

The tutors were selected from a list of "good citizens" in their respective classes. To be on this list the student must display appropriate social behavior and "on task" behavior for the previous week. Tutoring was viewed as a privilege earned by good behavior. The tutors were given some initial training in a few essential components of teaching, namely reinforcing, prompting, fading and extinction procedures.

There were a few problems with this program and these centered around inadequate training of the tutors. For the most part however, the program was a great success in terms of the teachers and students involved. The tutors provided real assistance for the younger students and concurrently were learning new skills themselves. Approximately 10 tutors were used each week for one 45 minute block of time each morning.

UNIVERSITY OF ILLINOIS AIDES

It was arranged with four instructors in educational psychology that their semester students in a certification requirement course, could spend one or more 3-hour block

of time aiding at Prairie School in lieu of going to class. Ninety-five students participated in this program and were distributed among the classrooms for the semester. The objectives of this program were 1) to provide an actual educational experience for the college students planning an educational career and 2) to provide the Prairie teachers with more classroom assistance. This program turned out to be very valuable and the teachers quickly came to rely on the services of aides. This program was initiated and coordinated by the Title III supervisor.

I.P.I. PRESCRIPTION STYLE STUDY

Mr. Donald Polste, Principal of Prairie School, conducted a study to investigate the effects of varying the style of I.P.I. prescriptions on student performance. He observed that there is some evidence that the type of prescription writing used by teachers of I.P.I. has a definite effect on the progress made by pupils and the amount of on task behavior demonstrated by these pupils in the classroom. The method employed in this study involved an analysis of the number of topics mastered and the amount of on task behavior demonstrated by these pupils in the classroom.

Each of
four teachers used one of four treatments for each quarter

of the year according to an established schedule which minimized the effect of teacher interaction and the sequence of treatments.

The following four treatments were used:

1. Teachers were asked to prescribe all pages in skill booklets which required further study as determined by the pre-test for a particular skill.
2. Only three initial pages were to be prescribed from each skill requiring additional study. If the mastery was not obtained an additional three pages were to be assigned.
3. Teachers were asked to permit each pupil to decide which work pages he needed to do in order to master each skill. Mastery was based on post test scores.
4. This treatment combined aspects of all the above treatments with the teacher determining the procedures as established by the authors of I.P.I.

The results of this study have not been sufficiently reviewed at this date to give definitive conclusions, however this information will be available in the near future. During the course of the study it became obvious to those involved that children who mastered skills using a minimum number of work pages were able to make greater progress while also demonstrating a higher level of on task behavior.

B. Community Agencies

Several community agencies have interacted with the Prairie School Title III Program and its staff.

1. Herman Adler Mental Health Zone Center
2. Center for Upgrading Educational Services
(Also a Title III Project)
3. Champaign School District

The Herman Adler Zone Center (Mental Health Unit) has relied heavily on the developments of the Title III project in the areas of classroom management techniques, curriculum individualization, and in-service training.

The Center for Upgrading Educational Services (CUES) also a Title III Project in the community has relied heavily on the Prairie School Title III Project in the areas of in-service training, classroom management techniques and special education services.

The Champaign School District has also to a lesser degree requested the services of the Prairie School Project Staff. This consultant help was in the area of individualizing curriculum and classroom management techniques.

SECTION IV

- A. Several aspects of the project will be continued now that Title III E.S.E.A. funds have been withdrawn. The money required to maintain those aspects being continued is being supplied by the local school district (Urbana School District 116)

Mr. David Phillips, Project Supervisor, is being retained by the school district in the capacity of an educational psychologist to assist with the individualization of the curriculum and to assist teachers in the area of classroom management.

The portions of the program not being continued are the developmental aspects of the curriculum, and the dissemination of the Prairie School procedures and programs to other interested schools outside of this school district.

The project as it concluded at Prairie School will be maintained with the exception of the above mentioned areas. The role of the Project Supervisor will be expanded thru-out the district in an attempt to implement similar programs in other interested schools.

SECTION V

A. Dissemination

The work of this project was disseminated in several ways. The project Director and Supervisor were invited speakers at many in-service training sessions thru-out the state. Secondly the project mailed out a summary of our activities to interested people. Thirdly, Prairie School was set up as a demonstration center and each year approximately 300 visitors from across the nation came and spent time observing the program.

B. It is difficult if not impossible to determine which other schools or agencies have adopted parts of our program. However it is estimated that the Prairie Project

had a large impact on several projects in this state and several others. Our Lindergarten curriculum has been sent in a sample form to other agencies. Our teachers training procedures have been looked at closely by several agencies but we have had no follow-up to determine their final product.

SECTION VI

1. List of all items disseminated

a. Newspaper clippings in Urbana, Illinois, newspapers concerning all or part of the Title III Project

- | | |
|------------------|-------------------|
| 1. Aug. 25, 1968 | 6. Sept. 10, 1969 |
| 2. Sept. 1, 1968 | 7. Mar. 14, 1969 |
| 3. Oct. 1, 1968 | 8. May 20, 1969 |
| 4. Feb. 14, 1968 | 9. Oct. 3, 1969 |
| 5. Mar. 19, 1968 | 10. Feb. 1, 1970 |

b. Newsletter to Parents

1. April, 1970

c. Brochures to any interested parties

1. March, 1969

See Appendix 5 for these articles.

SECTION VII

A. Items produced by the Project

Under the Title III grant this project revised individualized math and reading instructions materials produced by Research for Better Schools (reading) and

Appleton-Century-Crofts (math). It is felt that because of the tremendous bulk of this material and its similarity to the existing material it is a waste of time and money to send copies of this to anyone. These materials were the only items produced by the project.

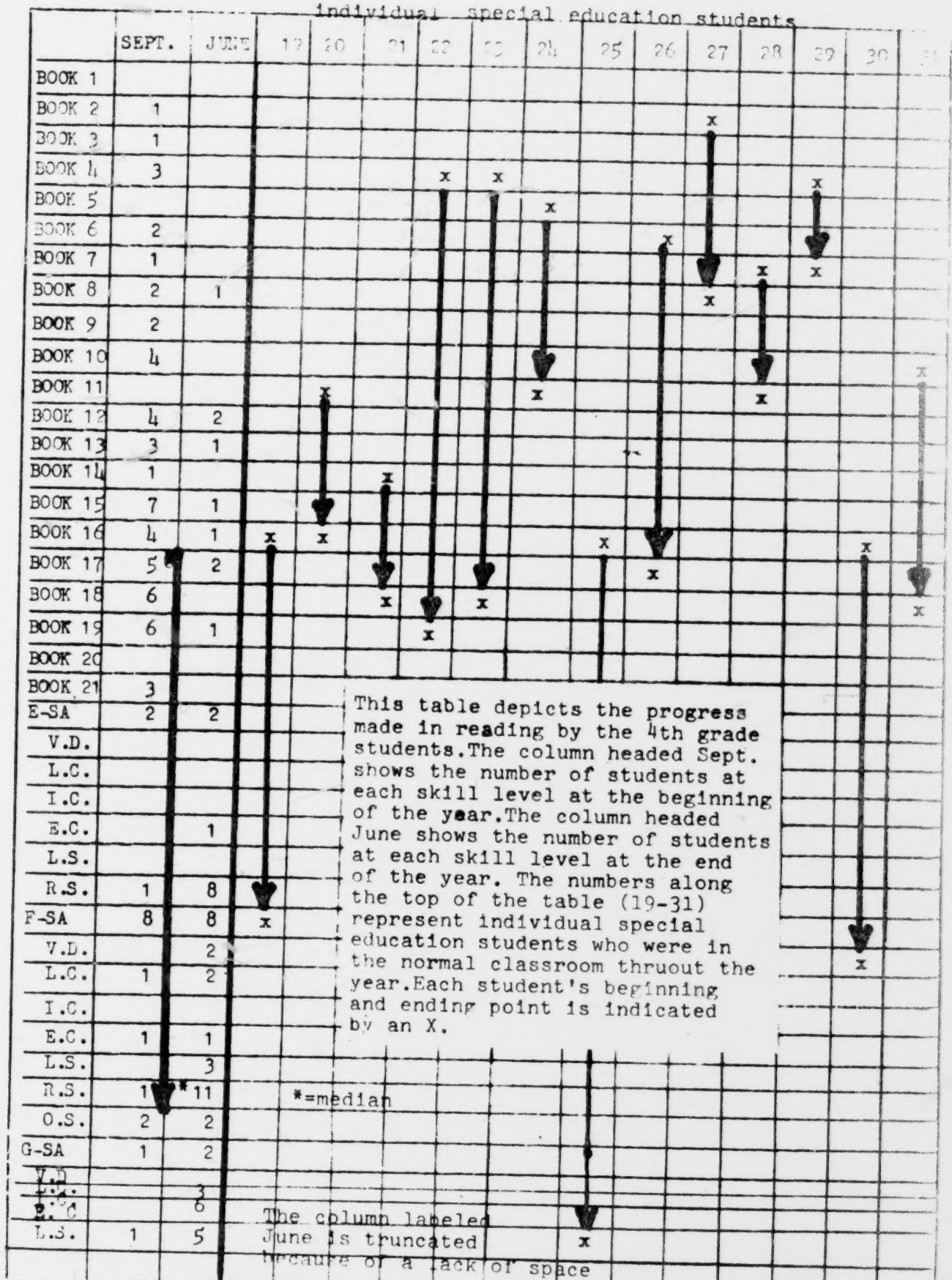
The Prairie Kindergarten Programs in reading and math are revisions and compilations of other existing programs and it is similarly felt that the bulk of these materials makes it a waste of time and money to send copies of this to anyone.

APPENDICES

- Appendix 1-----Reading achievement progress grades
one thru six and special education
student progress
- Appendix 1a ----- Math achievement progress grades one
thru six and special education student
progress
- Appendix 2-----Behavior Modification Teacher reports
- Appendix 3-----Classroom discipline or Time Out data
- Appendix 4-----Behavioral approach to lunchroom behavior
problems data
- Appendix 5-----Publicity clippings
- Appendix 6-----Kindergarten Achievement Data

APPENDIX I

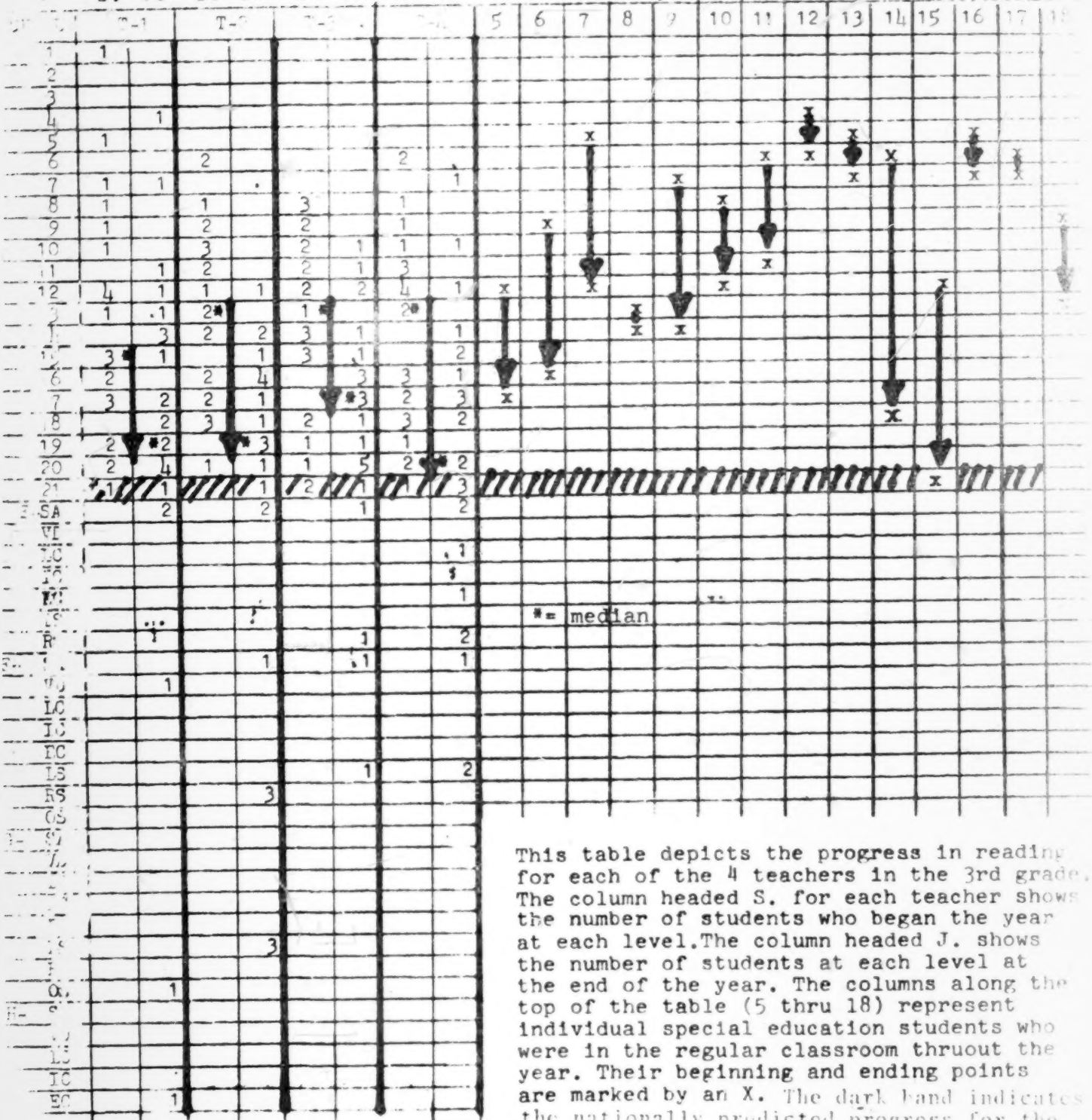
4th. GRADE PUPIL PROGRESS - READING



3rd GRADE PUPIL PROGRESS - READING

Appendix I

S. J. S. J. S. J. S. J. individual special education students



This table depicts the progress in reading for each of the 4 teachers in the 3rd grade. The column headed S. for each teacher shows the number of students who began the year at each level. The column headed J. shows the number of students at each level at the end of the year. The columns along the top of the table (5 thru 18) represent individual special education students who were in the regular classroom thruout the year. Their beginning and ending points are marked by an X. The dark band indicates the nationally predicted progress for the end of the year.

Appendix 1

GRADE 2 FUPIL PROGRESS - READING

individual
special Ed. students

	TEACHER 1		TEACHER 2		TEACHER 3		TEACHER 4		CHILD 1	CHILD 2	CHILD 3	CHILD 4
	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE				
BOOK 1	1		5		1		2					
BOOK 2	2		1				1					
BOOK 3		1		1	1		2					
BOOK 4	1		4		1		1					
BOOK 5	5				2	1	5					
BOOK 6			3		2		2	1				
BOOK 7	4	2	3*	3	5	1		4				
BOOK 8	6*		3	1	3*		6*					
BOOK 9	3		1	2	3	3	4					
BOOK 10	3	1	3		3	2	4	3				
BOOK 11	3	2	4	1		2		3				
BOOK 12	1	1	1	4		3		3				
BOOK 13		2	1	4*		3*	2					
BOOK 14		2	1	1	2		1					
BOOK 15		8*	1	2	2	1		5*				
BOOK 16		3			3	2		4				
BOOK 17		3		1		4		3				
BOOK 18		1		1		2						
BOOK 19		2		2				3				
BOOK 20				4				1				
BOOK 21				2								
E-SA				1		1						
V.D.												
L.C.												
I.C.												
F.C.												
I.S.												
F-SA						1						
V.D.												
L.C.						1						
I.C.												
E.C.												
I.S.												
R.S.				1		1						
O.S.												

* = median

This table depicts the progress in reading for each of the 4 teachers in the 2nd grade. The column headed Sept. for each teacher shows the number of students who began the year at each level. The column headed June shows the number of students at each level at the end of the year. The columns along the top of the table (1 thru 4) represent individual special education students who were in the normal classroom thruout the year. Their beginning and ending points are marked by an X. The dark band indicates the nationally predicted progress for the end of the year.

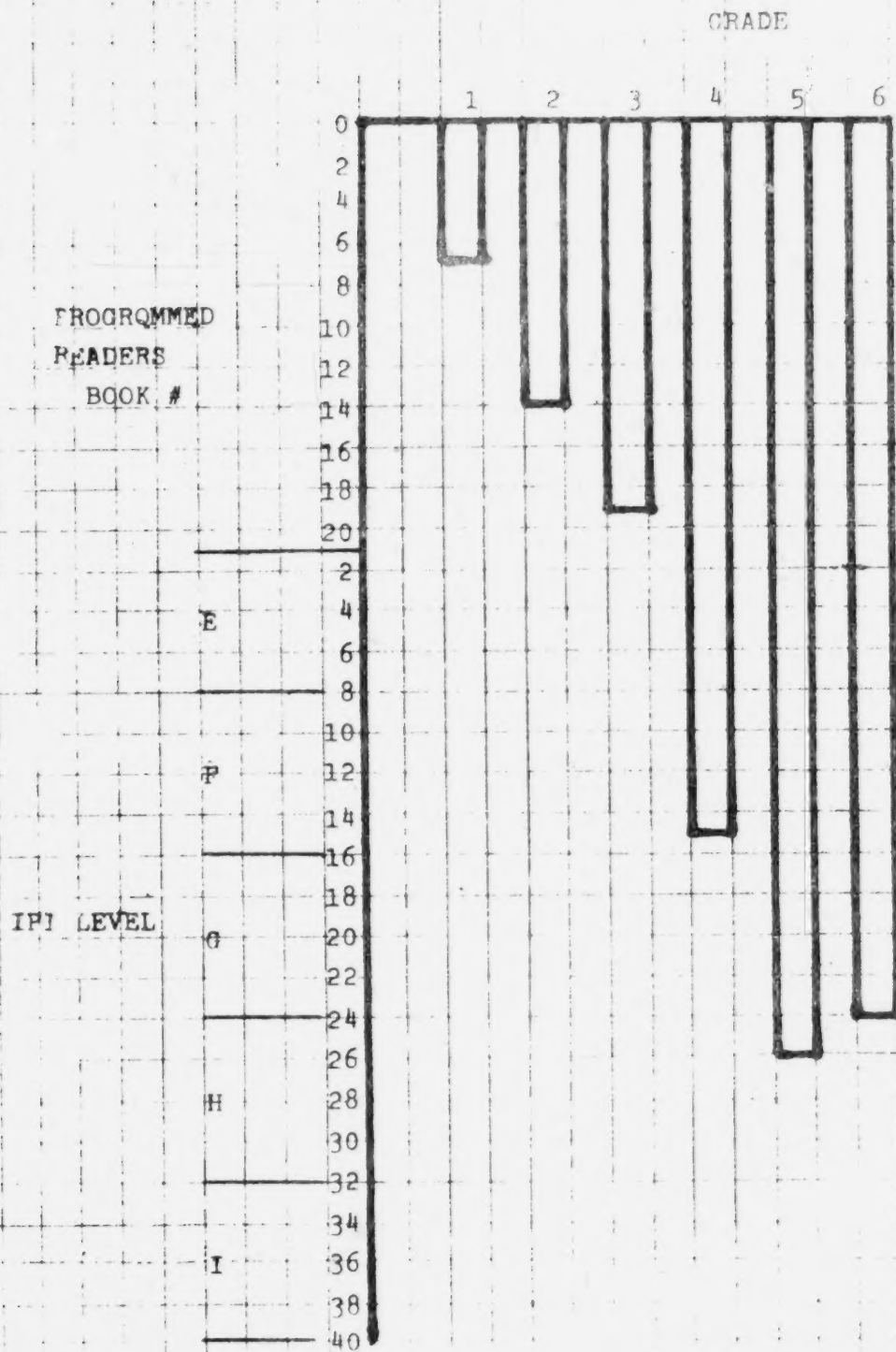
Appendix 1

GRADE 1 FIFTH F. GRADES - READING

	TEACHER 1		TEACHER 2		TEACHER 3		TEACHER 4	
	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE
BOOK 1	19*		21*		18*		21*	
BOOK 2	2		1					
BOOK 3				2				
BOOK 4		4		2				4
BOOK 5		6		3		2		3
BOOK 6		2*		2		1		2
BOOK 7		2		*6		4		5*
BOOK 8				3		2		5
BOOK 9		1		1		4*		
BOOK 10		2		2		1		1
BOOK 11		2						1
BOOK 12						1		
BOOK 13				1		1		
BOOK 14		1				1		
BOOK 15						3		

This table depicts the progress in reading for each of the 4 1st grade teachers. The column headed Sept. shows the number of students who began the year at each level. The column headed June shows the number of students at each level at the end of the year. The dark band indicates the predicted average progress at the end of the year.
 * = median

Appendix 1
 READING SUMMARY
 PRAIRIE SCHOOL

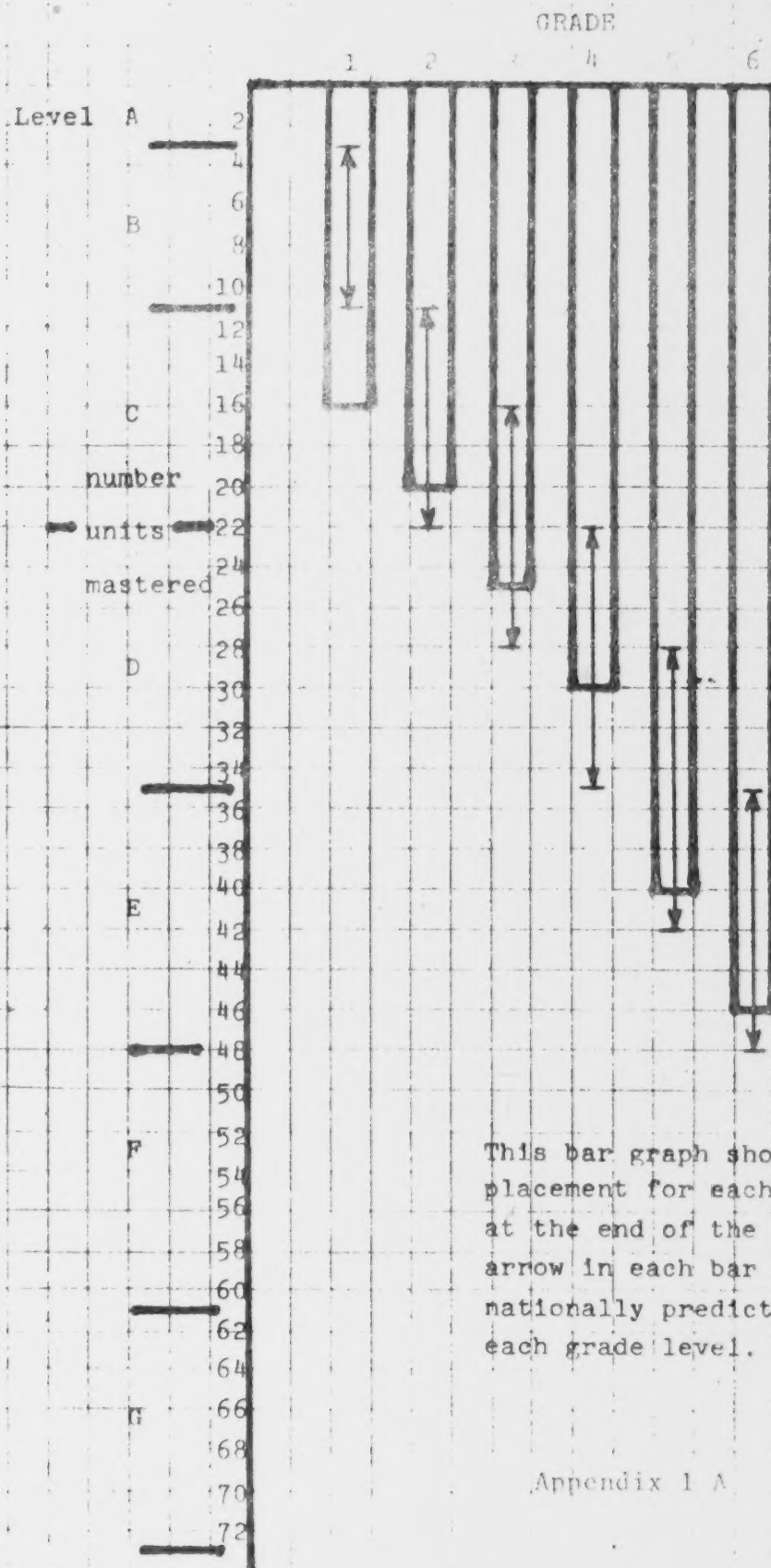


Appendix 1

This table depicts the progress made in reading by the 5th grade students. The column headed Sept. shows the number of students at each skill level at the beginning of the school year. The column headed June shows the number of students at each skill level at the end of the year. Each number along the top of the table (32-47) represents an individual **special** education student who was in the normal classroom thruout the year. Their progress may be compared with the "regular" 5th graders. Their beginning and ending point is indicated by an X.

This table depicts the progress made in reading by the 6th grade students. The column headed Sept. represents the number of students at each skill level at the beginning of the year. The column headed June shows the number of students at each skill level at the end of the year. Each number along the top of the table (48-68) represents an individual "special education" student who was in the normal classroom setting thruout the year. Their beginning and ending point is indicated by an X. Their progress may be compared with the "regular" 6th grade students.

Appendix 1a
MATH SUMMARY SHEET PRAIRIE, SCHOOL



This bar graph shows the median placement for each grade level at the end of the year. The arrow in each bar shows the nationally predicted range for each grade level.

Appendix 1a

GRADE 1 STUDENT PROGRESS - MATH

	TEACHER 1		TEACHER 2		TEACHER 3		TEACHER 4	
	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE
A-Num	4						2	
Add.	3						6	
Frac.	1							
B-Num.	12 *		20 *		20 *		13 *	
P.V.								
Add.								5
Frac.					1			2
Mon.					1			
Time								
S.O.M.	1							
Geo.								
C-Num.		1		2		2		7 *
P.V.		2						
Add.		2		1		3		1
Sub.		4				3		
COP.		3 *		7 *				1
Frac.		2				1		1
Mon.		1		1				
Time				1				
S.O.M.						1		1
Geo.						1 *		
S. T.		1				1		1
D-Num.		5		4		7		1
P.V.		1		3		1		1
Add.						1		
Sub.						1		
Mult.								
Div.								
COP.								
Frac.								
Mon.								
Time								
SOM								

This table depicts the progress in math for each of the 4 1st grade teachers. The column headed Sept. for each teacher represents the number of students who began the year at each level. The column headed June shows the number of students at each level at the end of the year. The dark bands indicate the optionally predicted range. * = median

	1 TEACHER		TEACHER 2		TEACHER 3		TEACHER 4		INDIVIDUAL SPECIAL EDUCATION STUDENTS	
	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE	SEPT.	JUNE
B-Num	7		1							
P.V.	1		2							
Add.	4		3		4	2	2	1		
Frac.			4		1	1	1			
Mon.			1		1		1			
Time	1		1							
SOM		1				1				
Geo.		1								
C-Num	8	3	3	3	3	1	13	2		
P.V.	5		6		3	2	4			
Add.	2		5	3	4	3	3	1		
Sub.		3	2	1	2					
COP	2	3		2	3	4	1	1		
Frac.		3		1		1				
Mon.		2						1		
Time		1		1						
SOM				1				2		
Geo.										
S.T.					1		1			
D-Num.	1	3		2		2		4		
P.V.		1		4		3		9		
Add.		6		1		6		5		
Sub.		3		3		1		1		
Mult.										
Div.								2		
COP				1						
Frac										
Mon.				1						
Time										
SOM				3						
Geo.										
S.T.										
E-Num						1				
P.V.										
Add.										
Sub.		1								
Mult.				1						

* = median

This table depicts the progress in math for each of the 4 2nd grade teachers. The column headed Sept. for each teacher shows the number of students who began the year at each level. The column headed June shows the number of students at each level at the end of the year. The columns along the top of the table (1 thru 4) represent individual special education students who were in the normal classroom thruout the year. Their beginning and ending points are marked by an X. The dark bands indicate the nationally predicted range.

Appendix 1a
3rd. GRADE PUPIL PROGRESS - MATH

	S. J.		S. J.		S. J.		S. J.		individual special education students																	
SKILL	T-1	T-2	T-3	T-4	5	6	7	8	9	10	11	12	13	14	15	16	17	18								
A-Frac																										
A-Num																										
B-Num	4	2	1	8																						
F.V	1	8		5																						
Add	1	2		4																						
Frac				2																						
Mon	2			2																						
Time				1																						
SOM																										
Geo																										
C-Num	4			5																						
PV				2																						
Add	1	2		1																						
Sub	1	1		2																						
COP	2			3																						
Frac	1			3																						
Mon		1		1																						
Time	1	1																								
SOM	1			1																						
Geo																										
S.T.																										
D-Num	5	2	2	4	4	5																				
PV		3		2		2																				
Add		2	1	1		2																				
Sub		2		2	1	2																				
Mult.				2		2																				
Div.		2		1		1																				
COP		1		1		3																				
Frac		3		1		2																				
Mon		1																								
Time				1																						
SOM		3		1		1																				
Geo.																										
S.T.																										
E-Num		1		1		1																				
PV		1																								
Add																										
Sub		1																								
Mult.																										
Div.																										
COP																										
Frac																										
Mon.																										
Time																										
SOM																										
S.T.																										

This table depicts the progress in math for each of the 4 teachers in the 3rd grade. The column headed S. for each teacher shows the number of students who began the year at each level. The column headed J. shows the number of students at each level at the end of the year. The columns along the top of the table (5 thru 18) represent individual special education students who were in the regular classroom thruout the year. Their beginning and ending points for the year is indicated by an X. The dark bands indicate the nationally predicted

This table depicts the progress in math for each of the 4 teachers in the 3rd grade. The column headed S. for each teacher shows the number of students who began the year at each level. The column headed J. shows the number of students at each level at the end of the year. The columns along the top of the table (5 thru 18) represent individual special education students who were in the regular classroom thruout the year. Their beginning and ending points for the year is indicated by an X. The dark bands indicate the nationally predicted range.

*= median

Appendix 1a

4th. GRADE PUPIL PROGRESS - MATH

individual special education students

	SEPT.	JUNE	19	20	21	22	23	24	25	26	27	28	29	30	31
B-Num	1							x							
P.V.															
Add															
Frac				x											
Mon.															
Time															
SOM															
Geo.															
C-Num	45#	1	x	x		x	x	x		x			x	x	x
P.V.	1														
Add	1	1													
Sub	7				x										
COP	1	1	x												
Frac	9	1													
Mon.		2													
Time															
SOM	3	1													
Geo.															
S.T.	1														
D-Num	3	3	x				x			x		x			
P.V.		1													
Add	1	1													
Sub		9													
Mult															
Div.		8				x									
COP		3													
Frac		4#													
Mon.		5													
Time															
SOM		7													
Geo.															
S.T.		2													
E-Num		7													
P.V.		4													
Add		5													
Sub		3													
Mult		2													
Div		2													
COP															

This table depicts the progress made by the 4th grade students in math. The column headed Sept. shows the number of students at each skill level at the beginning of the year. The column headed June shows the number of students at each skill level at the end of the year. The numbers along the top of the table (19-31) represent individual special education students who were in the normal classroom during the year. Each student beginning and ending skill is indicated by an X.

5th GRADE PUPIL PROGRESS - 1977

Appendix 1a

special education students																			
SKILL	SEPT.	JUNE	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
B-Num	1				x		x			x				x				x	
P.V.					x		x	x		x				x				x	
Add					x		x	x		x				x				x	
Frac	2				x		x	x		x				x				x	
Mon					x		x	x		x				x				x	
Time	1				x		x	x		x				x				x	
SOM	1				x		x	x		x				x				x	
Geo.					x		x	x		x				x				x	
C-Num	21		x	x		x			x		x								
P.V.	2		x	x		x			x		x							x	
Add	2		x	x		x			x		x	x	x					x	
Sub	2		x	x		x			x		x	x	x					x	
COP	8 *		x	x		x			x		x	x	x			x	x	x	
Frac	19		x	x		x			x		x	x	x			x	x	x	
Mon.			x	x		x			x		x	x	x			x	x	x	
Time	2		x	x		x			x		x	x	x			x	x	x	
SOM	2		x	x		x			x		x	x	x			x	x	x	
Geo.			x	x		x			x		x	x	x			x	x	x	
S.T.	2		x	x		x			x		x	x	x			x	x	x	
D-Num		1																	
P.V.	1																		
Add																			
Sub	1	1																	
Mult																			
Div																			
COP		2																	
Frac		1	x																
Mon																			
Time	3																		
SOM	3																		
Geo																			
S.T.	1																		
E-Num		7																	
P.V.		6																	
Add		4																	
Sub		1																	
Mult		15 *																	
COP		1																	
Frac																			
Mon		2																	
Time		2																	
SOM		4																	

This table depicts the progress made in math by the 5th grade students. The column headed Sept. represents the number of students at each skill level at the beginning of the year. The column headed June shows the number of students at each skill level at the end of the year. Each number along the top of the table (32-47) represents an individual "special education" student who was in the regular classroom setting thruout the year. Their beginning and ending point is indicated by an X. Their progress may be compared with the "regular" 5th grade students. The dark bands indicate the nationally

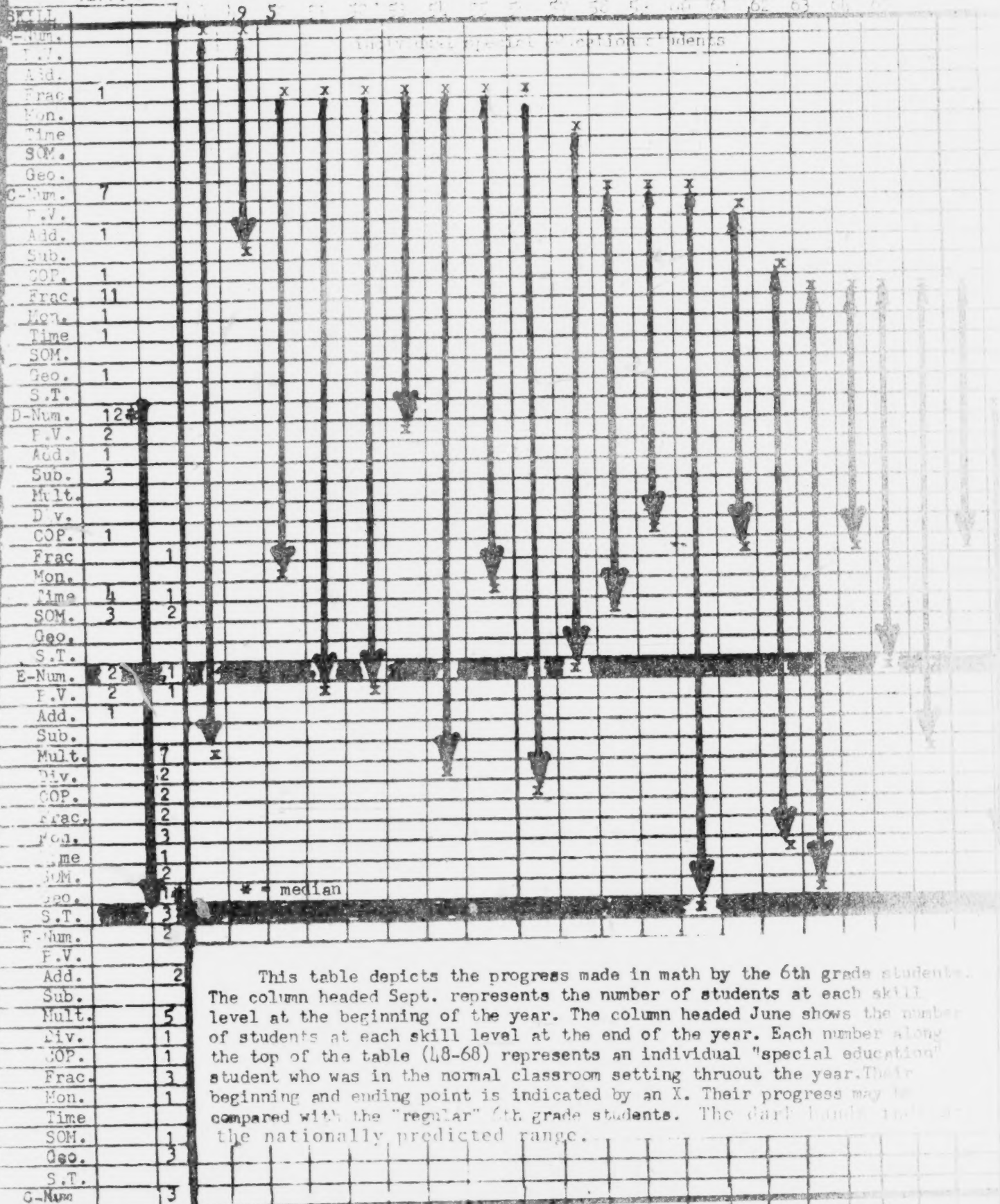
This table depicts the progress made in math by the 5th grade students. The column headed Sept. represents the number of students at each skill level at the beginning of the year. The column headed June shows the number of students at each skill level at the end of the year. Each number along the top of the table (32-47) represents an individual "special education" student who was in the regular classroom setting thruout the year. Their beginning and ending point is indicated by an X. Their progress may be compared with the "regular" 5th grade students. The dark bands indicate the nationally

6th. GRADE

MATH

Appendix 1a

SEPT. JUNE



Appendix 2

T H E

APPLICATION OF BEHAVIORAL PRINCIPLES

T O

CLASSROOM SETTINGS

THIS PAPER IS AN OUTGROWTH OF THE PRAIRIE SCHOOL
TITLE III PROJECT AND THE IN-SERVICE TEACHER
TRAINING COURSE CONNECTED WITH IT.

by:

DAVE PHILLIPS
TITLE III PROJECT SUPERVISOR
PRAIRIE SCHOOL
URBANA, ILLINOIS

APPLICATION OF BEHAVIORAL PRINCIPLES TO CLASSROOM SETTINGS

Nine studies completed by elementary teachers on the effective use of behavioral principles are presented. These studies were conducted by the teachers named as part of a class requirement. They were taking an in-service graduate course on Behavior Management offered by the University of Illinois Educational Psychology Department, Dr. Wesley Becker and David Phillips were the instructors.

The studies are presented as they were prepared by the teachers, and reflect their attempt to systematically apply behavioral principles to a classroom setting. The teachers involved had no prior knowledge of behavioral principles and thus are representative of most teachers. The course was a fourteen week seminar and the project was the culmination of the techniques and theory learned.

A wide variety of problems were approached and dealt with using behavioral principles. No attempt was made to produce "experimentally elegant" studies with careful controls. Rather a more pragmatic approach was taken whereby the teachers involved tackled the problems they faced in the classroom as efficiently as possible.

A brief outline of typical procedures used in dealing with behavior problems is presented. One of the purposes of this paper is to acquaint the reader with the kinds of problems faced and the techniques used in dealing with them.

BEHAVIOR AND ITS CONSEQUENCES

Most all of the behavior teachers deal with is controlled by its consequences. What ever immediately follows a given piece of behavior will have a definite effect on the probability of that behavior occurring again. If you say, "Please pass the salt", and the salt is passed to you, you have been rewarded for asking, by receiving the salt. You are more likely to ask for it that way in the future. If you say, "Thanks", to the passer you reward his passing the salt and he is more likely to pass it in the future because of the reward. Similarly, if a child exhibits deviant behavior and the teacher attends to it (by nagging, scolding, reprimanding, etc.,) the child is very likely going to do it more in the future. Her attention is reinforcing the very behavior she wishes to eliminate! The best way to eliminate this behavior is to remove the attention (reinforcement) by ignoring the behavior and reinforce some other behavior which is incompatible with the undesirable behavior. That is, praise the child when he is behaving properly and ignore the deviant behavior.

This may seem very trivial, but in general most of our behavior is controlled in the same way. Much behavior is under the control of subtle interacting consequences and thus it is not always obvious or clear what the controlling variables are. The basic principle is: Behavior is a function of its consequences. Thus, if we want to change behavior, we must change the consequences.

Essentially, we can either increase, decrease, or maintain behavior. Behavior strengthening and maintenance is a result of reinforcement.

Behavior weakening is the result of either extinction or punishment. Extinction is the procedure where reinforcement is withheld from a particular behavior. For example, a child is teasing someone and no one pays any attention to his teasing. This withholding of attention (reinforcer) is going to weaken the teasing until it ceases. Punishment is the procedure where following a specific behavior an unpleasant (aversive) event is applied, like spanking a child following his running into the street. Punishment may take the form of removing some valued reinforcer from the individual following a specific behavior, like removing the person from the presence of other people who may reinforce him with their attention, or taking away privileges, money, etc.

BEHAVIOR MODIFICATION

I. DEFINE

- A. Specifically state the problem behaviors which have been observed, i.e., the child is out of his seat or says, "I don't like school", etc. Do not generalize, such as the kid fools around too much or has a bad attitude. You cannot effectively deal with these generalizations, you can however, deal with specific behaviors.
- B. What do you want the child to do? How does this differ from the current behavior, i.e., is this a problem of more, less, or different behavior?

II. MEASURE

- A. In order to assess any treatment, we must know the strength of the behavior before the treatment. Observe and record systematically. Measurement techniques: frequency counts and durational measures in most cases. How many times does the behavior occur in a minute, hour, etc., or how long does it last after it begins?
- B. Date Recording: graphs of rates and frequencies. Draw a simple graph depicting the frequency or duration for each observation period.

III. CONSEQUENCE Behavior is a function of its consequences. If you want to change the behavior, change the consequence.

- A. Identify a likely reinforcer, punisher or extinction procedure. If you want to increase a behavior, reinforce it. If you want to weaken a behavior, punish it or withhold reinforcement (extinction).
 1. Likely pitfalls and misidentified reinforcers. We all too often assume what reinforces us will reinforce others - this is not always the case. Also, what reinforces at one time may not be a reinforcer at another time, e.g., food may be a good reinforcer before a meal however, directly after a meal food is not likely to be an effective reinforcer.
- B. Set a behavioral criterion for the consequence. Specifically what must the person do before he gets reinforced, punished, or placed on extinction.
 1. When increasing a behavior, begin with small steps toward the terminal performance. Don't demand too much too soon. Reinforce approximations to the desired final performance.

2. ~~Another~~ likely pitfall. Standards for reinforcement are initially too difficult for some students. Individualize the standards for reinforcement. Reinforce for improvement, not one standard of performance.
- C. Arrange the details of the consequence. How is the consequence presented? By whom and how?
 1. A direct consequence: immediately follow the behavior with the consequences. A child gets a problem correct; you consequence it by saying, "Good".
 2. An indirect consequence: a "token" or "point" system whereby some symbol signifying reinforcement is given, with the actual consequence delivered at some later time. A child gets a problem correct; you consequence it by giving a token which will be exchanged for some reward at a later time.

IV. ASSESSMENT

- A. The importance of continued measurement. Without continued measurement, you cannot assess the effectiveness of your consequences. Some estimate of the frequency of the behavior must be made or it is likely that you will be unable to determine if your plan is effective or not. A subjective judgement can be very misleading.
- B. What to do if the consequence appears to be ~~ine~~ ineffective. This can be established by measurement of the behavior.
 1. May be an error in consequence identification. Perhaps the consequence chosen is not an effective reinforcer or punisher. If not, change it.
 2. The initial criterion for reinforcement may be too high. You may be asking for too much too soon. Reinforce approximations to the desired behavior.
 3. The time delay between the behavior and the consequence may be too long. Delayed reinforcement or punishment will most likely be ineffective. To be effective the consequence must immediately follow the behavior.

Behavior Management in the Classroom

I. Most classroom problems are of two general types: academic problems and problems of classroom management.

A. Problems of Inadequate Academic Performance.

1. Students who have the necessary academic skills but sometimes do not participate.
 - a. Example: On the basis of achievement, you feel reasonably sure the child is capable but puts out no effort.
 - b. Example: The difficulty in obtaining class participation when the material is too difficult or uninteresting.
2. Students whose poor academic achievement results from a lack of prerequisite academic skills.
 - a. Example: The student who lacks a specific skill, i.e., can't multiply because he can't add.
 - b. Example: The student who lacks more general skills, i.e., hasn't learned to read because he hasn't learned how to pay attention.

B. Problems Involving Classroom Management.

1. Relatively weak behaviors which should be strengthened.
 - a. Example: The student who is withdrawn and generally non-communicative. Class participation behaviors should be strengthened.
2. Students with strong undesirable or disruptive behaviors which should be weakened and/or eliminated entirely.
 - a. Example: The student who is "deliberately" disruptive. These disruptive behaviors should be eliminated.
 - b. Example: The noisy classroom. The noise level should be lowered by reinforcing more quiet behavior.

II. Strategies for solving academic and classroom management problems.

A. Consequences Designed to Strengthen Desirable Academic or Classroom Behaviors.

1. Have you specified the behavior of interest in terms of observable behavior?

2. Do you have an accurate estimate of the current behavior? That is, have you measured? This must be done in order to determine the effectiveness of any program to change behavior.
3. How to find a reinforcer. On the basis of past experience, advance knowledge or simply ask the children what do you like?
 - a. Will grades work? To some children grades are too far removed in time to be effective.
 - b. Other reinforcers - ask your subjects. What do you like or what would you work for e.g., privileges, activities, or goodies.
4. Which behavior are you going to start with, what behavior must occur before I reinforce the child? i.e., some approximation of the desired behavior which currently is emitted with some measurable frequency.
 - a. Are all the necessary prerequisite skills well learned or is some remediation necessary? Don't demand some performance the child simply cannot do because no one has taught him before. Remediate the skill if necessary.
 - b. Be sure to make your first criterion for reinforcement something that the student can do relatively easily. If you are asking for a difficult performance initially you may readily get failure. Reinforce for a correct performance.
5. Is the consequence going to be direct or indirect (a point system)?
 - a. Example: an academic strengthening problem involving the shaping of prerequisite behaviors: reading readiness skills. Reinforce these behaviors with praise or other direct reinforcer.
 - b. Example: classroom motivational systems in public schools: a token reinforcement system. The tokens are turned in later for a variety of reinforcers.
 - c. The teacher's standards keep increasing as the student's performance improves. You are succeeding but don't notice it. As the student's behavior improves, it is easy to forget the improvement you have made.

B. Consequences Designed to Weaken Undesirable Behavior.

1. Specify the behavior of interest in terms of observable behavior.
2. Do you have an accurate estimate of the current behavior? i.e., have you measured its frequency or duration?
3. Deciding on the consequences - three ways to weaken behavior.
 - a. Extinction - this amounts to withholding the reinforcement that is maintaining the behavior.
 - b. The reinforcement of incompatible behavior strengthens behaviors that are incompatible with the undesirable behavior, e.g., sitting down is incompatible with standing up.
 - c. Punishment - removing a reinforcer (e.g., take away a privilege) or presenting an aversive stimulus (e.g., spanking). These procedures when made contingent on a specified response will weaken it.
 1. Punishment isn't necessarily the best procedure even though it may be the fastest. It produces side effects such as evidence and escape behavior and may result in the increase of aggressive behavior, i.e., the person will tend to avoid a situation in which he is punished e.g., a classroom or school.

C. How Do You Know If You Have Succeeded?

1. The importance of continued measurement. The only way you can really determine how your program is working is to measure the frequency of the behavior of interest. Is it increasing or decreasing as you had planned? Casual observation can be very misleading and lead to incorrect decisions about the program.

D. Relativity Of The Consequences.

1. The behavior you have either strengthened or weakened is not permanent. This is true of all behavior. We behave according to the consequences. For example: if you reinforce and increase "on task" behavior in a child and the next year he goes into a class where the teacher gives him attention for "fooling around" he will come under the control of these new consequences and begin to "fool around" more. Most of our behavior is like this.

SUMMARY

1. IDENTIFY AND DEFINE BEHAVIOR
2. MEASURE
3. PLACE CONSEQUENCE ON THE BEHAVIOR
4. CONTINUED MEASUREMENT.
5. TRY AGAIN IF NOT ACHIEVING ANTICIPATED RESULTS.

The following material is concerned with observation and graphing. Graphing is a convenient way to summarize your results. Included are: General Observation Techniques; Instructions to Observers; Coding Categories and Symbols which have been used (you need not limit yourself to these), Observation Sheet and a Summary Graph Card.

OBSERVATION TECHNIQUES

1. Specify the behavior you are going to observe very precisely, always in terms of observable behaviors. A general class of behavior may be used such as "on task" or "off task" in so far as you have defined "on task" so that it may be reliably observed.
2. Behavior which is of a single response nature may be recorded with a frequency tally over a measured period of time, e.g., hitting, pinching, etc. Other types of behaviors which are composed of many separate responses and endure over an extended period of time should be recorded in short 10-15 second intervals. Behaviors in this class are such things as "on task", thumb sucking, talking, etc. This type of recording may be done as follows: take a sheet of paper, draw a series of cells on it (like large graph paper). Use this to record on. Observe for 10 seconds. If the person emits the behavior of interest place a mark in the cell. This recording is done for 10 seconds. So, you are observing for 10 seconds and recording for 10, then observe again and so on. Do not record during the 10 second observing period. This technique calls for the use of a stop watch taped to a clip board, or some similar arrangement.

The frequency of observations will vary according to many things like practicality, etc. However, be consistent and observe under the same conditions every observation period. For example, you might observe every morning from 9:30 - 10:00. This assumes the same teacher, kids and classroom each time.

General Instructions for Observers

1. Do not talk to any children at any time; in school room, hall, or yard, including before and after actual school hours.
2. Do not let children either see or hear you talking to their teacher or another observer. Questions on recording can be written and discussed later.
3. Do not make any differential responses to children. Do not laugh at children, answer children, or change position of head or eyes, if addressed. Do not turn and look at any child when you hear a noise. Make the minimal response necessary to see the child you are recording.
4. When observing sit silently and as immobile as possible in the most convenient observer chair. Change location quietly only when absolutely necessary.
5. Do not engage in any social behavior with children either on entering or leaving school or classroom. Do not respond to children in halls.
6. The goal is to become a piece of furniture. You are not to be a variable with reference to the children's behavior. "Neither discriminative nor reinforcing be."

CHILD BEHAVIOR OBSERVATION

Coding Categories

Symbols	Classes	
X	Gross Motor Behaviors	Getting out of seat; standing up; running; hopping; skipping; jumping; walking around; rocking in chair; disruptive movement without noise; moves chair to neighbor; knees on chair is rated.
N	Disruptive Noise	Tapping pencil or other objects; clapping; tapping feet; rattling or tearing paper; throwing book on desk; slamming desk. (Be conservative, only rate if could hear noise when eyes closed.) Do not include accidental dropping of objects or if noise made while performing X above.)
^	Disturbing Others Directly	Grabbing objects or work; knocking neighbor's books off desk; destroying another's property; pushing with desk.
→	Agression (Contact)	Hitting; kicking; shoving; pinching; slapping; striking with objects; throwing object at another person; poking with object; attempts to strike; biting; pulling hair.
↙	Orienting Responses 90 seated	Turning head or head and body to look at another person, showing objects to another child, attending to another child. (Must be of 4 seconds duration not rated unless seated; or more than 90% using the desk as a reference.)
V	Verbalizations	Carrying on conversations with other children when it is not permitted. Answers teacher without raising hand or without being called on; making comments or calling out remarks when no question has been asked; calling teacher's name to get her attention; crying; screaming; singing; whistling; laughing loudly; coughing or blowing loudly. (May be directed to teacher or children.)

// Other Tasks

Ignores teacher's question or command; does something different from that directed to do; including minor motor behavior such as playing with pencil eraser when supposed to be writing; coloring while the record is on; doing spelling during the arithmetic lesson; playing with objects; eating; chewing gum. The child involves himself in a task that is not appropriate.

____ Relevant Behavior

Time on task; e.g., answers question, listening, raises hand, writing assignment. (Must include whole 20" interval except for orienting responses of less than 4 seconds duration.)



Teacher Behavior

Teacher attends to a particular child at any time during the 10" interval gives attention by praising, disciplining. (The teacher can help the child at desk, talk to, etc.) The circle indicates the teacher attended to the behavior symbolized inside the circle.




SUBJECT _____ DATE _____

TIME 204011

OBSERVATION INTERVAL LENGTH: 10", 10", 30", etc. _____

OBSERVED BEHAVIOR:

[illegible]

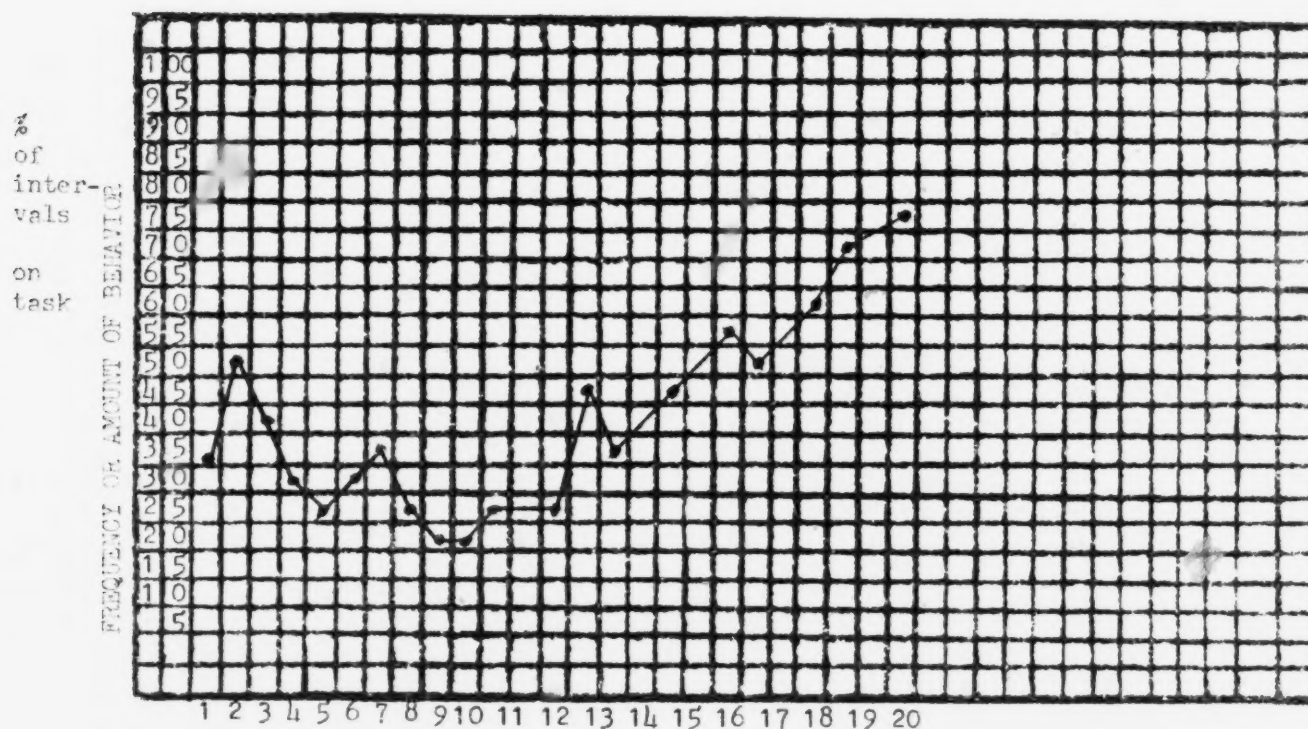
You may fill in your own units of frequency and time on the vertical and horizontal margins. For example, on the graph shown, there was one 20 minute observation period per day for 20 days. Ten days were recorded before treatment so we can assess the effectiveness of the program. We were observing "on task" behavior and reporting the results in terms of percentage of intervals observed during which "on task" behavior occurred for the full 10 second interval.

BASELINE

TREATMENT

(Observations before treatment)

OBSERVATIONS



TIME: MIN. ____ Hr. ____ Day ____ Wk. ____ Mo. ____

TEACHER'S NAME: _____

TARGET CHILD: _____

1. TARGET BEHAVIOR: _____

GRADE: _____ AGE: _____

2. Procedures used to change the behavior: _____

3. Summary of results: _____

(Back side of card)

BEHAVIOR MODIFICATION PROJECT

Wanda J. Miller

Description of Target Behavior

Selection of a target behavior was difficult, as I have one of those rare classes, a first grade, in which it is almost impossible to find undesirable behavior. I chose David, whose problem was different from usual deviant behavior. By licking, touching, and rubbing, David irritated his lips and surrounding areas with such frequency that his mouth area was constantly red and raw-looking. He frequently complained that his mouth hurt, asking that I put some medicine on it. Though I had suggested that his refraining from licking and touching would help, I did not pursue correction of the problem. The terminal behavior I sought was cessation of the irritating behaviors that resulted in David's sore mouth.

Time Span of Experiment

I was pressed for time with only thirteen possible observation days before Christmas vacation. Therefore, I limited my observation to one solid block of time before the holiday break. I realize this short time is not ideal and may cast some doubt on the results; however, this was a practical limitation.

Observation Personnel

At the time of the experiment I had a junior participant from the University of Illinois in my classroom preparing for student teaching. She was the only observer available in our building. After my discussing the principles of this course, she was extremely interested and eager to serve as my observer again, a built in shortcoming to the study. If two observers were used it would have been possible to establish reliability of the observer. However, this was not possible.

Recording Procedure

Time plan:

Three days baseline, ten days extinction
thirty minutes each day, same time and class activity
Ten seconds observing -- ten seconds recording

Code categories:

Symbol	Definition
l	licking lips and surrounding area
p	pencil in or on mouth and surrounding area
f	fingers in or on mouth and surrounding
a	arm or sleeve rubbing mouth area

Procedure to Weaken Target Behavior

Explanation to target child of the experiment and terminal behavior desired.

Vocal praise when undesirable behavior was absent: i.e., "Your mouth is looking better, David." "You are remembering very well." Etc.

My facial expressions of a smile, a hug, or wink when he was refraining.

Vocal praise, to the whole class, of David's positive efforts.

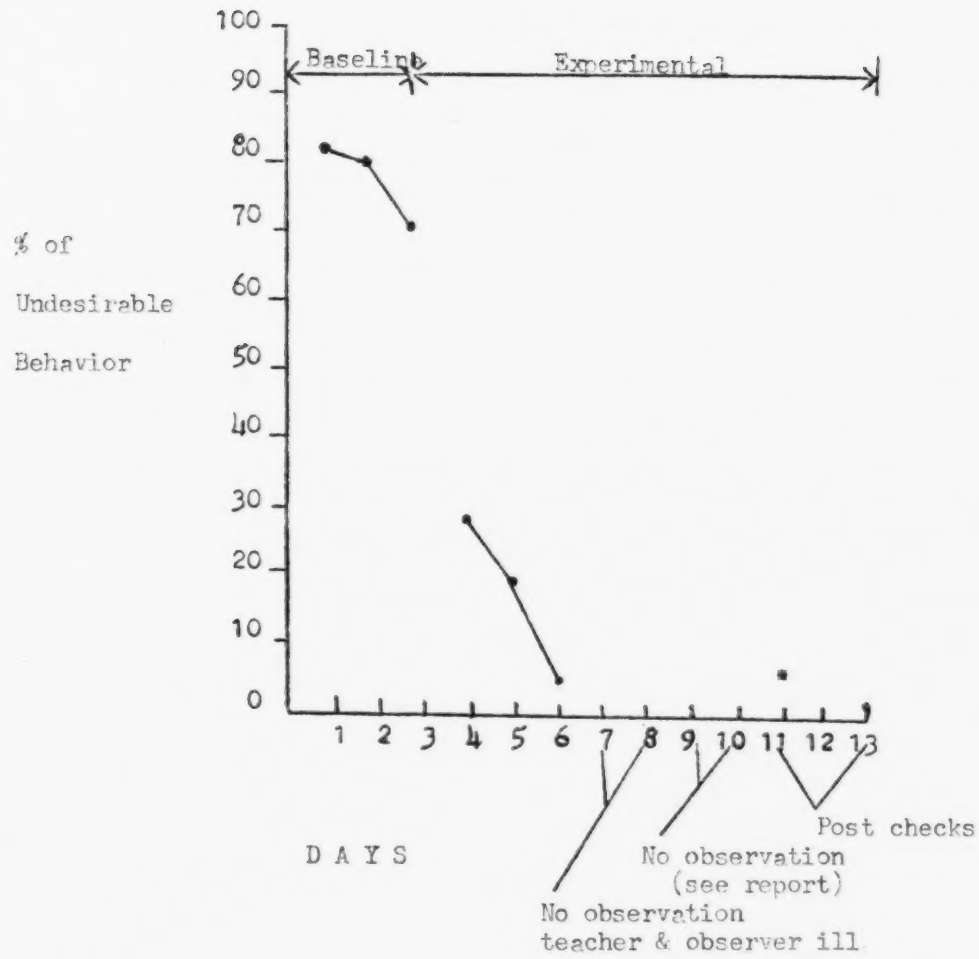
Getting the class to help David accomplish his goal through their praise.

Results

In three days of baseline observation the undesirable behavior registered 82%, 81% and 68% at the observed time. At the introduction of extinction procedure on the fourth day, the percentage dropped to 29%; fifth day to 18%; and the sixth day to 4%. Illness of both teacher and observer prevented data collection on days seven and eight. Post checks were made on days eleven and thirteen to be sure the extinction pattern was durable. Such post checks resulted in 5% and 2% of undesirable behavior. The percentage dropped so quickly that contingent reinforcement, beyond praise, was unnecessary in order to effect weakening the undesirable behavior.

After a two-week Christmas vacation, I observed David's mouth area to be normal. His reward is a normal mouth, which he is most happy about. He is proud of our cooperative effort and says he is determined it won't happen again. The class and I continue to reinforce David's desirable behavior. My terminal objective has been reached.

MILLER



A PROJECT IN BEHAVIOR MODIFICATION

Edith Paterson

Choosing a target child presented a problem in my case. My class is a high achieving group of middle primary students. Therefore, the group has no serious problems.

Lucy is a six year old child who scores well above 150 on the California Test of Mental Maturity. Her achievement scores also place her far above the average middle primary student. She was chosen as a target child because she seldom completes assignments. Her time is usually spent staring off into space, doodling on her paper, or wiggling in her seat. Therefore, the target behavior in this case is for Lucy to sit still, face forward, eyes on paper, and complete the assigned task.

Lucy was observed for approximately twenty minutes a day for eight days. Behavior was observed for ten seconds and then recorded for ten seconds. The behavior which was observed was time on task. Time on task behavior was defined as: sitting appropriately in seat, eyes on paper, and apparently working on the assigned task. The data also indicated gross physical movement. The observations occurred during reading period. This is a time when Lucy has a specific set of tasks to complete. Previously, Lucy displayed much deviant behavior during this period and seldom completed the assigned task during the time allotted.

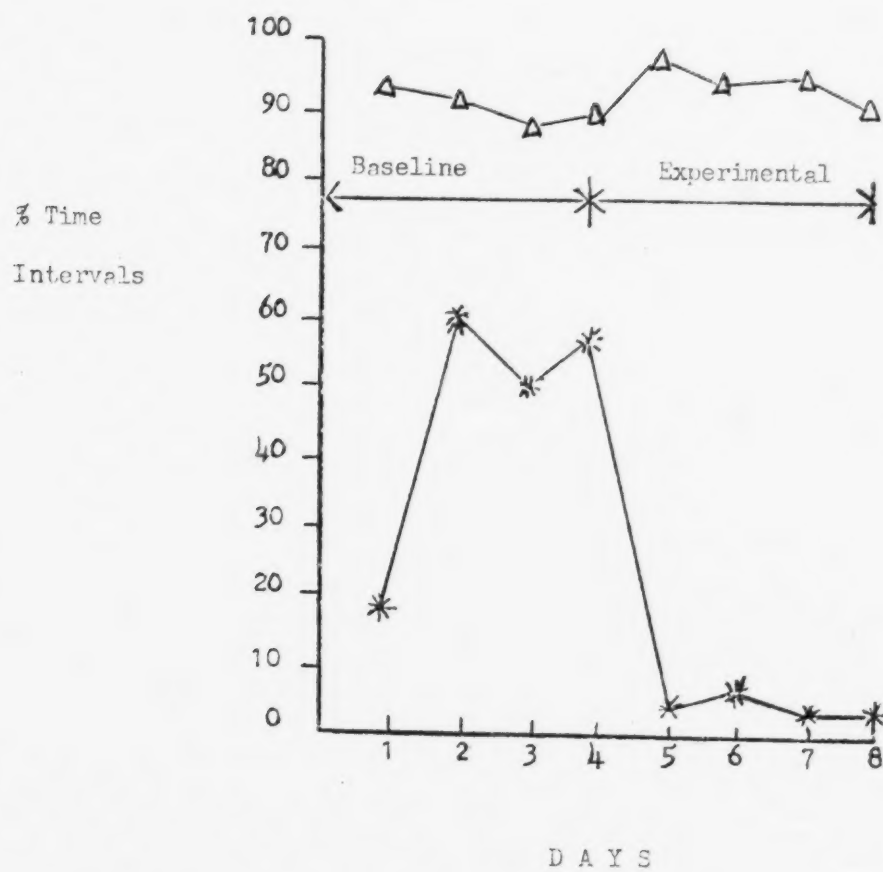
After four days of baseline, I changed my daily program. I opened each day with a discussion of good work habits. I praised the children for stating correct behavior in a concise, positive manner. I also began giving Lucy praise and attention contingent on the target behavior; I ignored all behaviors incompatible with good work habits.

Since the baseline data had made me aware of the extremely high rate of gross physical movement, I felt this was probably the most seriously interfering behavior. Therefore, I directed many of my praise comments toward reinforcement of sitting still.

Figure 1 presents the per cent of time spent in gross physical movement. As this figure indicates the subject responded immediately to differential reinforcement. She began to display excellent work habits. Especially noticeable was the marked decrease in gross physical movement. Occasionally, she would revert to her old patterns of behavior. At that time, I used a simple comment, such as "I like the way Susie is sitting and working." The subject would immediately begin working well again.

Lucy's work habits have improved a great deal, especially in reducing her gross physical movement. In addition to her increased time on task the work produced has been more accurate. Although there is no data to illustrate attitude change, Lucy has expressed more of an interest in reading.

PATERSON



△ - time on task

* - gross physical behavior

BEHAVIOR SHAPING PROJECT

Mary V. Thornton

Name of Subject: Tim Anderson, Grade 2.

Target Behavior: For Tim to read, or do whatever task he is given to do without arguments as to which book he should be in, or without comments concerning Darrin, a classmate with whom I also work.

Behavior to be modified or eliminated is the almost constant queries or comments concerning Darrin. Tim's preoccupation with "which book Darrin is in", "which pencil Darrin uses", "which chair Darrin sits in", "which side of the table Darrin sits on", etc., was extremely disruptive to any learning situation.

Recording Procedure: A trained observer using a stop watch and clip board observed 10 seconds and recorded 10 seconds for approximately 30 minutes per day. A check mark was used for any comment or question about Darrin or other students that I work with which had no connection with the lessons we were doing. Such comments as "Is this the book Darrin is in?", or "Is this the story Darrin is on?", were not acceptable and received a check mark.

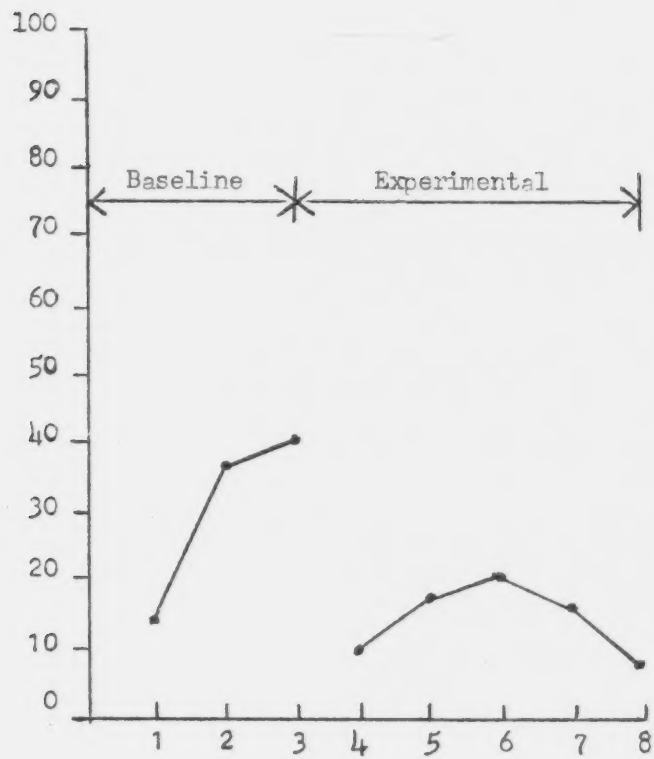
Experimental Procedure: Tim was told the 'Rules of my Room' were: 1. Each person works in the books he is given. 2. He doesn't worry or ask about other people's work. 3. He does the best he can. I tried to explain to Tim how some people were stronger and could run faster while, perhaps other people could read faster or in harder books, but all we wanted was for each person to do his best and not be concerned with what others were doing. My project was a little different from the regular classroom situation since I work with the children one at a time. I could not praise others to shape Tim's behavior since this preoccupation with others was the very behavior I was attempting to eliminate.

Praise was used as a positive reinforcer for any work done right. To weaken the unwanted behavior of questions and comments about Darrin, they were ignored (as much as possible) or answered with a very short answer and a displeased look when he insisted on an answer. Reinforcing comments such as "good", "fine", "very good", and "your doing very well", were made whenever possible.

Statement as to results: This procedure has been very effective. Tim has reached target behavior with only an occasional query concerning Darrin. His Home Room Teacher stated that he is also more co-operative in his home room.

THORNTON

% Deviant
Behavior



DAYS

CLASSROOM PROJECT IN BEHAVIOR MODIFICATION

Judy Wieting

Target Behavior: To decrease blurting out.

Recording Procedure Used: My observer recorded the number of "blurts" (undesirable verbalizations) occurring within 30 minute periods, each day for thirteen days.

Procedures Used to Modify the Behavior: I ignored any comments which were blurted out. I praised hand raising and talking only when called on. I praised listening and waiting to be called on.

My subject was Louis--nine years old--a second grader.

Those verbalizations by Louis which I considered to be undesirable, i.e., blurting out behavior, were comments which he made aloud to himself, classmates, or the teacher without having first been called on. I did not counts as "blurts" whispered conversations with a neighbor; but, rather only his random remarks, often only one or two words, which were audible to all in the room.

During the four day baseline period, I continued to treat Louis as I had all year. I felt it would render the results of the experiment invalid if I instituted any of the behavior modification procedures before baseline data had been gathered. Therefore, I at times reminded Louis either privately or in front of the class, not to talk without being called on. On occasion I responded to Louis' blurts, especially when he had given a comment or answer that I had been seeking. Therefore, on Day 5, when the time came to begin extinction of Louis' blurting out behavior, I had to discipline myself to be sure that at all times I ignored his blurts and gave attention only to the desired behaviors.

On the first of the nine experimental days, (Day 5), I posted a chart in the front of the room, enumerating the following three rules:

1. Raise your hand if you wish to talk.
2. Wait to be called on.
3. Listen while others talk.

I purposely listed as few rules as possible while still managing to cover the essentials. I felt that the task might seem easier to master if it did not involve numerous rules.

The entire class read the rules together and discussed each rule, being careful to follow the rules during our discussion. Louis seemed especially anxious to please me and had his hand up constantly. On this first day and for a few days following, I called on Louis every time he raised his hand and as soon as possible after he raised it. After Day 7, I found that by stressing rules 2 and 3, I could lengthen the interval between the time Louis raised his hand the the time I called on him, and still maintain the reduction of blurts.

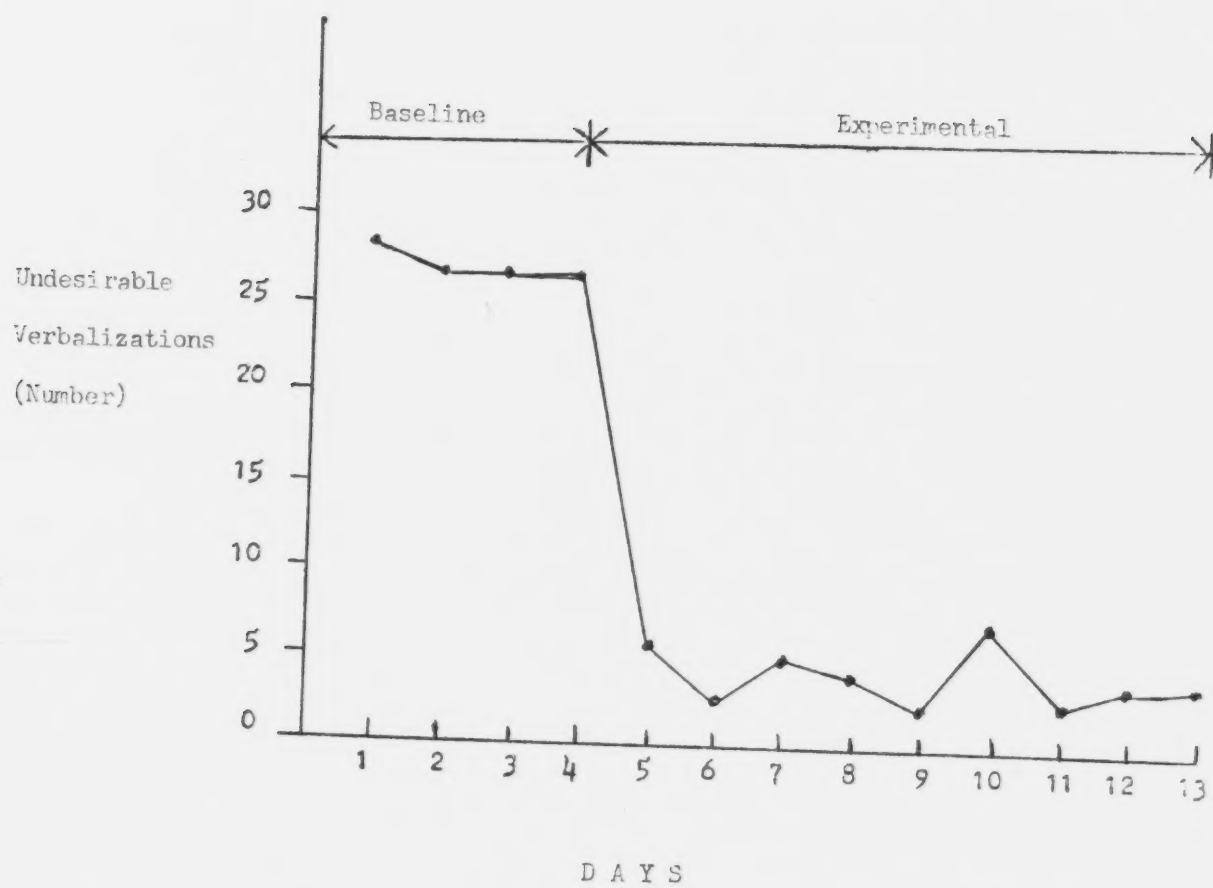
At first I praised Louis' slightest hand-raising movement. However, not much shaping was required. Louis was eager to receive positive attention. I praised Louis (and others) whenever they applied the rules, and referred to the rules in my reinforcing comments. Aside from the usual "goods" I used such comments as, "I called on ____ because he had his hand up" or "I like the way ____ always listens while others are talking." Whenever possible I named Louis in the comments. I praised good raisers, good waiters, and good listeners. In regards to the effectiveness of vicarious reinforcement on Louis, I found that it worked best if I could praise someone for an incompatible behavior at the exact moment when Louis was blurting out.

The whole class co-operated, too, by not responding to any comments blurted out by classmates. For example, during show and tell, if a classmate had a comment or question, the "shower" would not acknowledge it unless he had first called on that classmate. We recited the rules each morning, and when necessary or applicable, we reviewed the reasons for the rules and evaluated our class progress.

Results of the Experiment: I feel that I learned and accomplished much through this first project. Not only was my target behavior realized, proving to me the effectiveness of the ignore-and-praise combination, but fringe benefits were gained also. I became accustomed to giving praise freely and sincerely. And I am training myself not to acknowledge deviant behavior by means of any verbal, facial, or physical response. Although my primary goal was to stop Louis' blurting out and to get him to raise his hand if he wished to speak, good listening habits for the whole class resulted from this experiment. Toward the end of the thirteen days, after the basics of raising-hand-to-talk had been mastered, I pursued the skills further by branching off into connecting areas. All children learned to listen while classmates or teachers were talking. If a comment was made which repeated what another had just finished saying, I ignored it. I employed the use of such questions as "What do you think of what ____ said?" or "Please tell me what ____ just said."

The graph vividly illustrates the results of my application of principles of behavior modification. By ignoring the undesirable behavior and giving positive reinforcement to behaviors incompatible with it, the blurting out behavior was drastically reduced from a high frequency of occurrence. Perhaps over a longer period of time, the blurting out behavior can be totally extinguished.

WISTING



A STUDY IN BEHAVIOR MODIFICATION

Barbara Hernon

Steve, a ten year old 4th grader, tests at average ability. He was chosen for this study because he exhibited many behaviors incompatible with good work habits. During morning reading period he disturbed others at his groups by talking and leaning over their desks. Much of his time was also spent in daydreaming or working at something other than reading such as coloring a sheet of paper. Daily reading assignments were never completed.

The target behavior, in this case, therefore, is that Steve not disturb others or daydream but rather work continuously on his reading. To keep a record of Steve's behavior an observer came to the room for thirty minutes per day for nine days. Behavior was recorded in ten second intervals; observe for ten seconds, record for ten seconds. The observer recorded time on task; not talking and working on assigned reading task. The nine day observation period was divided into five days baseline and four days experimental. Following five days of baseline, Steve and I visited and discussed his poor work habits. Steve expressed a desire to improve. We set up a point system based on a set of positively stated rules for the reading period. The rules set up were working quietly and independently, and only on the reading assignment until the given assignment was completed. I explained that points would be contingent on compliance with these rules. The points would earn a mutually agreed upon reward.

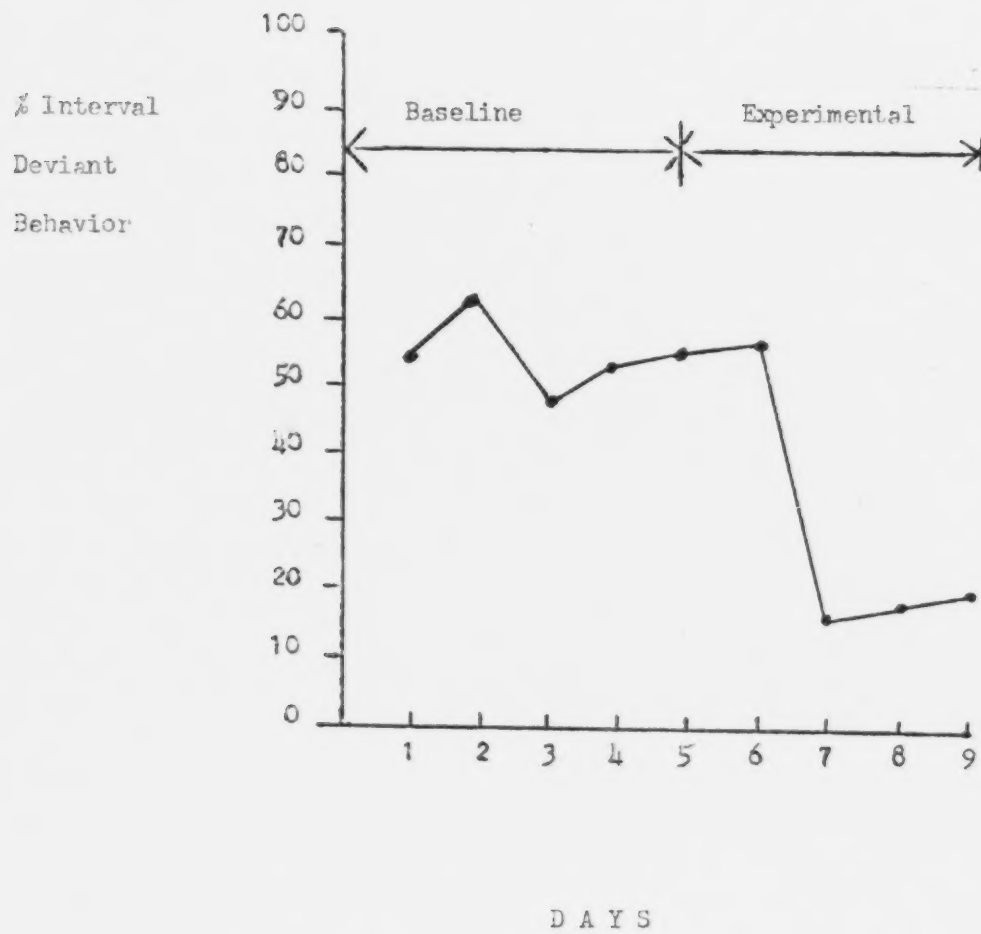
I began reinforcement by rewarding with praise comments and points during a specified interval. When deviant behavior occurred it was ignored and no points were given.

Figure 1 shows the data gathered during observation. For the first five days of baseline, Steve shows a high rate of deviant behavior--off task as much as sixty-five per cent of the time. Reinforcement began on day six and as the figure shows his deviant behavior was just as high as on the previous days. I analyzed this data and came to the conclusion that perhaps the fixed interval schedule required too long a work period before reinforcement occurred. I was reinforcing on a fifteen minute interval. Therefore, on days seven, eight, and nine, I reinforced on a five minute fixed ratio schedule. As the figure shows, the deviant behavior showed a marked decline. Steve was now off task only eighteen per cent of the time. As I changed no other aspects of the program, I attributed the results to the changed schedule of reinforcement.

On days seven, eight, and nine, Steve's behavior showed improvement. He was more attentive to the task at hand, worked more quietly and independently. His mother reported to me that there has been a change in attitude. He is greatly encouraged by the feeling that someone cares about him.

Steve is a long way from the desired end behavior; however, the improvement shown is encouraging. I intend to continue the program and reinforce successive approximations of the desired terminal behavior. Eventually the interval of reinforcement will be increased and more work will be required for reinforcement. I plan to work for completion of assignments as a next step. Since Steve responds favorably to praise, I intend to continue this form of reinforcement and fade out material rewards.

HERNON



A STUDY IN BEHAVIOR MODIFICATION

Martha Hutts

In my classroom, it was very difficult to choose a behavior which needed some modification; as I had already shaped the children to the desired behavior at the first of the school year. My group of children is the so called "sharper" class of second graders. They are all from strong middle class and upper-middle class families; therefore, they were more easily shaped to the desired middle class standards.

The child I chose with the target behavior was a seven and a half year old boy. Verdell tends to lean toward being boisterous if he is not in a quiet, orderly atmosphere. After riding the bus to school, he is sometimes this way. Sometimes when he came into the classroom in the morning, he would take a "whirl" through the room before taking off his coat at the closet. Then, he would talk loudly and wander aimlessly around the room. The first twenty (20) minutes in my classroom is spent working quietly at your own desk: finishing reading group work or math workbook, reading a book, creative writing, or quietly playing a game with your neighbor. To eliminate Verdell's deviant behavior was the goal.

Baseline data was secured by having an observer on four (4) days for thirty (30) minutes each day at the beginning of the school day. Verdell's deviant behavior occurred less than ten (10) per cent on any one of the four days of baseline (see graph).

After the Christmas vacation, I told Verdell that if he could get six (6) marks or points within the first thirty (30) minutes of school each morning, I would let him finger paint at the easel. I checked him at intervals of every five (5) minutes. I said to him, "The only way you can earn a point is by staying in your seat and by doing something quietly." In other words, the privilege of finger painting was contingent on earning the six points, and earning the points was contingent on his doing something while sitting at his desk.

At first, the privilege of finger painting was not altogether reinforcing to him. Verdell is the type of individual who does not like to do some things unless he knows that his peers are envious and want to do the same thing also. In other words, he really did not try too much to get the six (6) points. Then some of the other children started asking me if they could finger paint. I said, "No, this is just for Verdell." After this, the finger painting suddenly became a real privilege to Verdell.

The experimental period was done on five (5) days for thirty (30) minutes each day at the beginning of the school day. During this time the deviant behavior became almost zero (0) per cent (see graph).

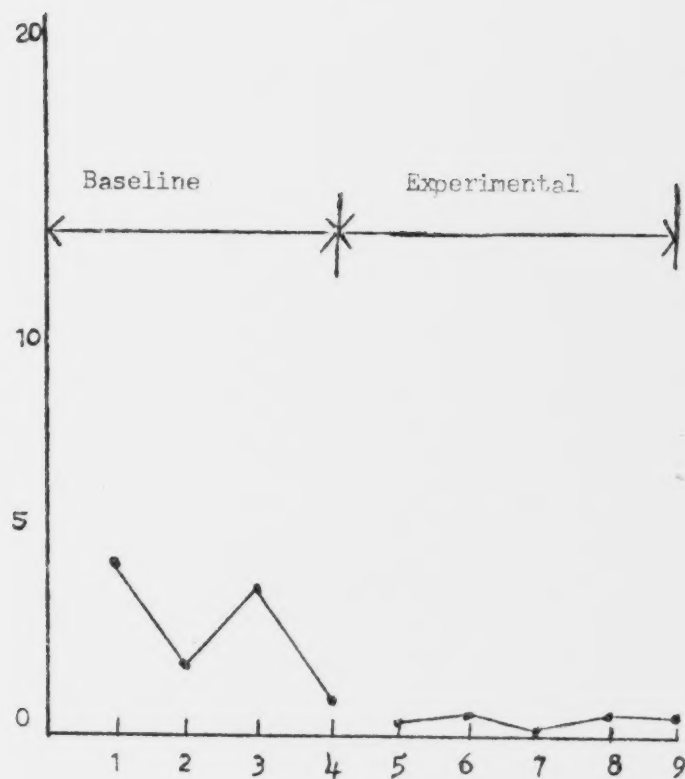
Since then, I have initiated this rule of finger painting with the remainder of the class. I thought I had a "perfect" class before the project, but now it is even more "perfect!" The finger painting easel is very reinforcing to even the "very best" of my children. I am amazed--it's like magic!

HUTTS

3 Intervals

Deviant

Behavior



DAYS

A PROJECT IN BEHAVIOR MODIFICATION

Anne Manton

The subject for this project was an eight year old fourth grade boy. He and a third grade girl come daily to my room for forty minutes of Type A tutoring in arithmetic.*

The behavior to be modified was the utterance of words or noises not relevant to the arithmetic tasks assigned. Acceptable verbalization, as defined for the observer, was questions about work or saying answers and problems aloud. Unacceptable verbalization was grunts and various other guttural sounds, giggles, whistles, sobbing, humming and comments such as "goodie" and "yah". Target behavior was silence or acceptable verbalization 80% of the time.

The observer sat behind the subject. She observed for ten seconds, then recorded for ten seconds using a stop watch and clip board. Data was gathered for thirty minutes each day.

Five days of baseline observation was done during which time I continued my previous practice of ignoring the deviant behavior of the subject. On the sixth day the experimental program was initiated. Both children were given copies of a chart. The three rules were discussed with them. It was explained that for each five minutes they followed the rules, an X would be placed in the box on the clock representing that time interval, and these points could be used to earn rewards. The reinforcers were then shown to them and consisted of things they had suggested, such as play dough, darts, a toy truck, a ring, coloring books, a doll and candy. A chart showing the points needed to earn each reward was included.

On the third day of the experimental period I began to give additional points for work completed. They could earn two points for a perfect paper and one point for not more than two errors. A point was also given for five correct responses to flash cards. These points were recorded in the boxes to the left of the clock. Each day the points were totaled and the children chose whether to use them or save them for a reward that required more points.

The graph shows the effect of the experimental program on the child. As his deviant behavior decreased his time on task increased and his work output increased from one-half paper to two or three papers completed daily.

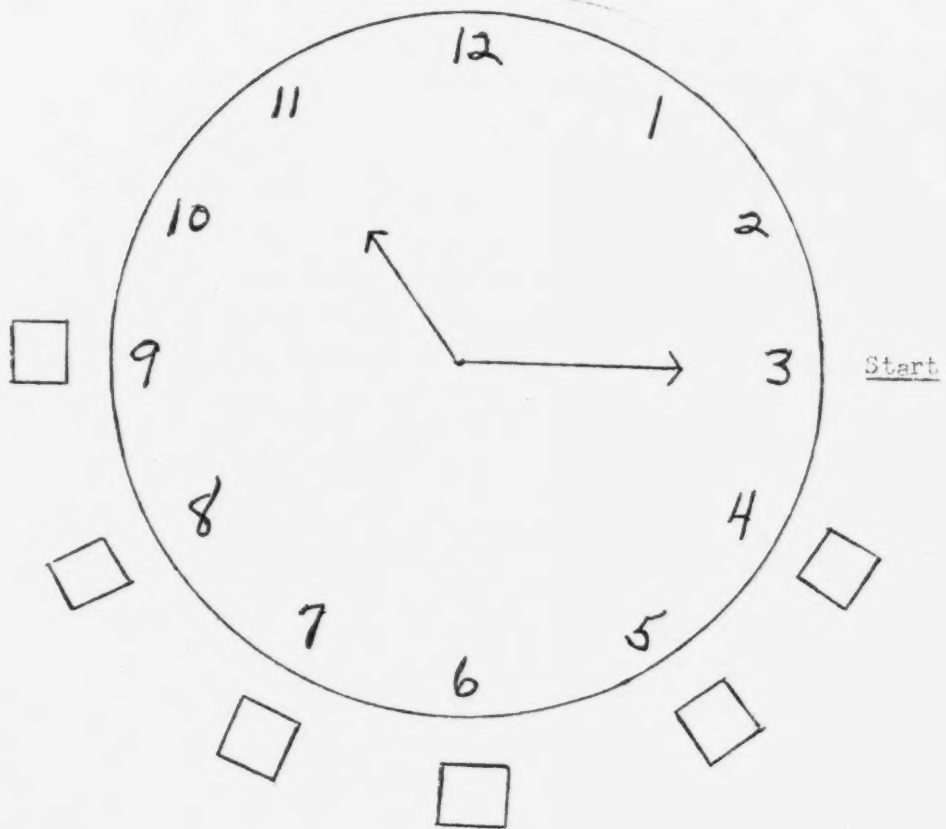
*Type A is a term used to designate children diagnosed as socially maladjusted.

RULES

1. No talking unless it is about arithmetic.
2. Sit in seats unless asked to come to board.
3. Raise hands in group discussions.

(Name)

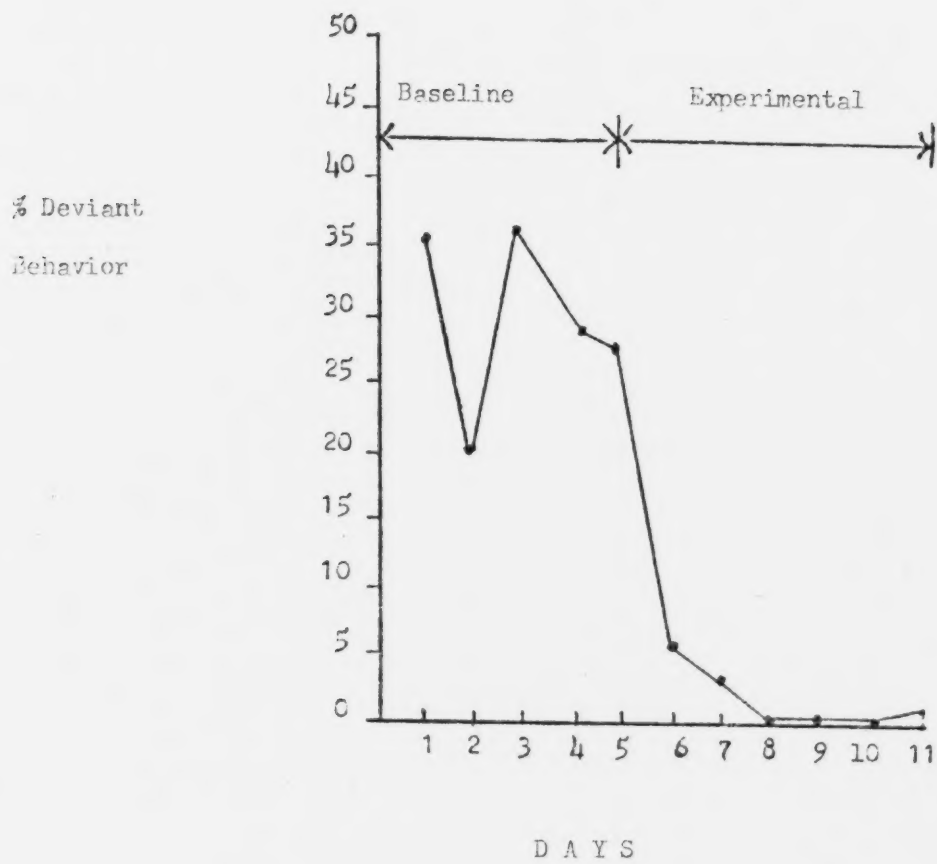
(Date)



Today's points

Points saved for tomorrow

MANTON



EFFECTS OF POSITIVE REINFORCEMENT ON THUMBSUCKING

Beatrice Marro

Procedure

The target child for this study was a five year old Kindergarten girl name Mattie. She was chosen for this study because her thumbsucking often interfered with her ability to communicate verbally.

Baseline

During the baseline and experimental periods, an observer watched Mattie for ten seconds, then recorded her observations for ten seconds, then observed again, etc. The criterion for scoring was that the thumb be in Mattie's mouth at least up to the knuckle for the entire ten second observation period in order to be scored as thumbsucking. During baseline, the teacher tried to discourage thumbsucking by frowning at Mattie when she had her thumb in her mouth or by physically removing the thumb from Mattie's mouth by pulling her hand away. Baseline was terminated before the desired five days because of Christmas vacation.

Experimental period.

Thumbsucking appears to be self reinforcing and it was felt that praise alone would not be a strong enough reinforcer in extinguishing the behavior. To determine what material reinforcers would be most effective, the teacher asked Mattie to help select them. Mattie said she liked toys such as balls, clay, small dolls and doll baby bottles. She could receive these prizes by earning points (at least five points per toy) which she could exchange for a prize.

The teacher set a timer which would ring at three minute intervals the first day of the experimental period. This interval was gradually increased to ten minutes. Mattie could earn one point everytime she did not have her thumb in her mouth when the bell rang. Points were recorded by filling in one block on a piece of graph paper everytime Mattie was exhibiting appropriate behavior (not sucking her thumb) when the bell rang. The rest of the class was instructed to ignore the bell, and everyone, the teacher included, was to ignore the thumbsucking. If Mattie had earned at least five points by dismissal, she could choose a prize or save her points until the next day and try to earn more points toward a larger prize.

Results

The results of this study are presented in Figures 1 and 2. The average incidents of thumbsucking during the instructional period of the day was 64% during baseline and 2% during the experimental period--a decrease of 62% (Fig.1). During rest period thumbsucking went from an average of 81% for baseline to 7% during the experimental period--a decrease of 74% (Fig2). It was noted that thumbsucking was highest on day #1 for baseline and day #7 for the experimental period (Fig.1). Both of these peaks occurred during a televised phonics lesson.

On the eighth day Mattie decided to work toward a doll in a bath tub. She did not earn the needed ten points that day, so she decided to take a lesser prize instead of waiting until the next day to earn more points.

MARRO

Fig. 1

% of time
w/thumb
in mouth
(instructional
period)

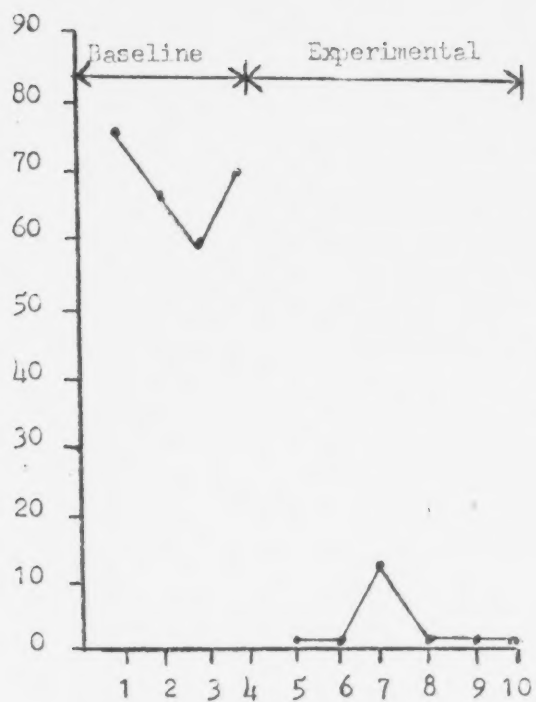
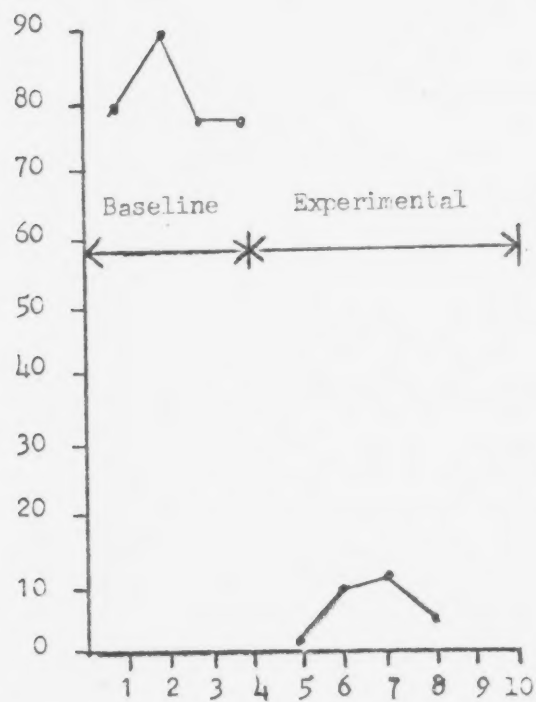


Fig. 2

% of time
w/thumb
in mouth
(resting
period)



BEHAVIOR SHAPING PROJECT

Joanne McIntyre

The subject for this behavior shaping experiment was Sally, age 8-4, one of nine children in a pre-primary Educable Mentally Handicapped (EMH) class. Because of her generally disruptive and uncontrolled classroom behavior, Sally was suggested by the school principal, Mr. R., for behavior shaping. The teacher, Mrs. K., had been enough concerned and perplexed about coping with Sally's behavior to suggest to Mr. R. that placement in a special program for acting out aggressive children might be a better class placement for Sally. Mrs. K. described Sally as bullying and terrorizing other less assertive children in the classroom, and her physical aggressiveness both in the classroom and on the playground created frequent crises with resulting heightened attention from and contact with the teachers involved. She was often impudent and stated that the teacher couldn't tell her what to do. Lack of self-control included unrestrained talking in class to other children, to herself as she worked and to the teacher, often in a demanding and insulting manner.

I. Target Behavior

For purposes of the assigned project, it was decided to focus upon Sally's inappropriate talking and more specifically her responding to questions which were directed to other children, random blurting out in class, either in a general way or to someone in particular, mumbling to herself and talking or whispering to other children.

Mrs. K. was cooperative in agreeing to the project but expressed doubts about both the efficacy and effectiveness of behavior shaping and operant conditioning techniques. She had been involved in a student teaching situation in which M & M's had been used, and her attitude toward this technique was negative. Furthermore, last year when she had assumed an intermediate EMH class as a replacement teacher at mid-year, she found that behavior shaping using concrete rewards had created a situation in which the pupils were so dependent upon concrete reinforcement that they would not perform without some tangible reward. Mrs. K. felt that because these children would be attending junior high school the following year, such extreme dependence upon extrinsic rewards was inappropriate, and she refused to continue with the token system then in effect.

Consequently, although Mrs. K. agreed to cooperate with the experiment, she insisted that no M & M's or token systems be required. She was at a distinct disadvantage compared to other teachers initiating behavior shaping programs in their classrooms at the same time in that she had neither the theoretical background ~~nor~~ acquaintance with pertinent research to appreciate the potential of operant conditioning, nor did she have the personal commitment to make it work. Rather, she was in the position of implementing in a rather rote fashion, some specific control techniques suggested by the observer-experimenter.

II. Recording Procedures

On each of three successive days, Sally was observed between approximately 9:55-10:25 A.M. in order to record baseline behavior. Each ten second observation interval was followed by ten seconds of recording whether or not inappropriate talking had occurred. This half-hour period was divided roughly into two segments. During the first 15 minutes, Mrs. K. met with five children for a reading group at the rear of the room while the other four children, including Sally, worked at their desks on prescribed papers from their individual work folders. During the last 15 minutes, the four children met with the teacher for their reading instruction while the other five children returned to their seats and worked on daily assignments.

III. Experimental Procedures

After three days of baseline behavior had been recorded for Sally the teacher was asked to post on the blackboard four rules which the class was to repeat with her each morning and at the start of each afternoon. These rules were: (1). I will sit quietly when I work at my desk. (2). I will keep my eyes on my own papers. (3). If I need help, I will raise my hand and wait quietly for the teacher to come. (4). When I know an answer, I will raise my hand and wait until the teacher calls on me. Mrs. K. was asked, in addition, to employ the following classroom control techniques in an effort to reduce the frequency of Sally's inappropriate talking. (1). Ignore Sally's blurting out by not looking at or saying anything to her rather than reminding her to be quiet. (2). Use no special urging when she lags or behaves as if she is not going to participate. Simply ignore her and proceed with the activity. (3). Throughout the day, frequently praise other children in the classroom who are working quietly and staying on task. (4). When you are working with the other reading group, look for opportunities to make such comments as, "I like the way Sally is working quietly at her seat," as well as praising other children doing seat work who will then realize that you are keeping an eye on them.

On the next ten school days, daily observations during the same half-hour period continued with the introduction of the four classroom rules and the four classroom control techniques.

IV. Results

On the first day of the experimental period, Sally responded in a verbally belligerent manner by announcing that she wasn't going to obey any rules and that she didn't have to mind anyone except her mother. Nevertheless, some behavior shaping did occur in that on the same day, Sally raised her hand repeatedly for teacher help although in some instances her impatience in waiting resulted in such comments as, "I raised my hand, and

"I'm not going to wait all day." During the experimental period, Mrs. K. felt that the experimenter simply by her presence in the classroom exerted a control which vanished when she left the room. For example, on one occasion, Sally verbally attacked Mrs. K. in a highly personal and offensive manner as soon as the experimenter left the room. Mrs. K. tried to ignore these comments but was told that a time-out period behind an isolation screen was entirely appropriate for such occasions.

As shown on the attached graph, percentage of Sally's inappropriate talking during 3 days of baseline observations ranged between 17% and 39% with an average of 27%. During the 10 day experimental period, percentage of inappropriate talking during the daily half-hour periods of observation ranged from 2% to 44% with an average of 18%. Talking behavior fluctuated widely particularly during the last 5 days immediately preceding Christmas vacation. The general level of excitement and anticipation of classroom parties, Christmas programs and other holiday related activities were variables which may explain the highest percentage of inappropriate talking, 44%, recorded on the final day of the experimental period. In addition, on several days two or more observers were in the classroom, and Mrs. K. felt that the level of pupil distractibility increased appreciably.

Concurrent with fluctuations in frequency of inappropriate talking, changes were observed in Sally's behavior in general. It had been observed during baseline that two or three teacher reminders were often required to engage Sally in some structured group activity. On the first day of the experimental period, Mrs. K. in adopting one of the prescribed techniques, omitted any special urging if Sally did not respond to initial directions and proceeded with the planned activity. When Sally was called for in her reading group, she continued sitting at her seat while the other 3 children went promptly to the reading table. After one child made a comment concerning Sally's absence, which Mrs. K. ignored, all children in the class ignored Sally, thereby effectively isolating her, and proceeded with their reading group. Sally, still seated, turned her head frequently toward her reading group, then turned her whole body halfway around in her chair and stretched her neck to see what they were doing. Finally, she was on her knees on her seat attending closely to her group's activities. During this 15 minute period, there were only two instances of inappropriate talking. During the remaining 9 days of the experimental period, Sally went promptly to her reading group on the first call from the teacher.

Although during the baseline period, no record was kept of the number of praising comments made by Mrs. K., the frequency of praising remarks was recorded during the experimental period. Number of praising comments, including those directed both to Sally and to other children in the class ranged from two on the first two days of the experimental period to 12 on the third day. The average number of praising comments during the daily 30 minute observation periods over the 10 days was 6.9. The experimenter felt that this classroom control technique could have been used to greater

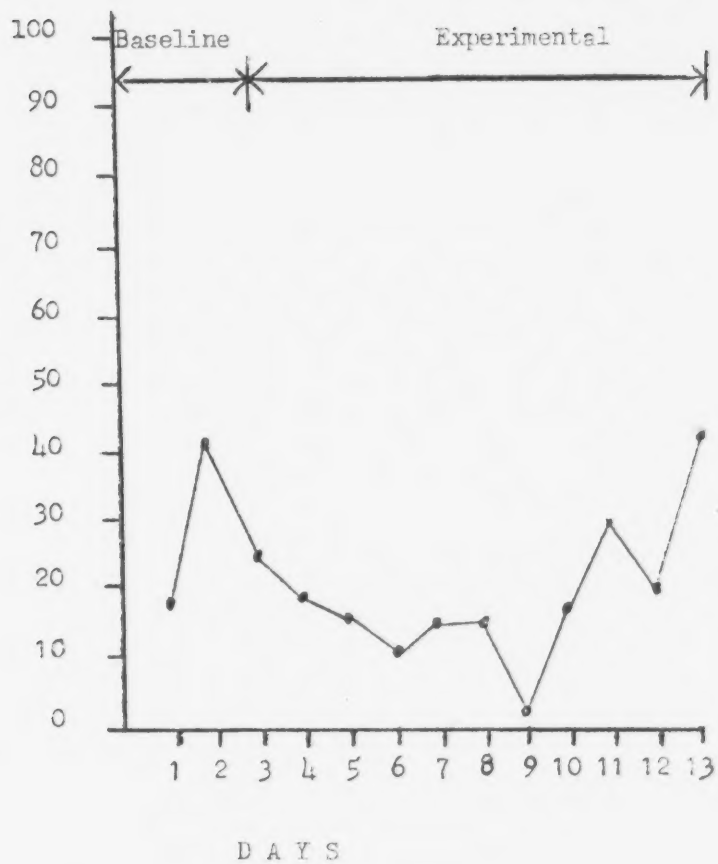
advantage by Mrs. K. It seemed not so much resistance to the method but rather that Mrs. K. was put into the position of assuming an unfamiliar pose in a classroom situation, i.e., actively looking for and verbally praising appropriate behaviors. In addition, the effectiveness of the contingent praise technique was weakened somewhat late in the second week of the experimental period, because Mrs. K. began issuing undeserved praise comments, noncontingent reinforcement. For example, a praise comment from Mrs. K. at the reading table to Sally doing seat work sometimes followed too closely some inappropriate talking or other noise so that Mrs. K. was in effect intermittently reinforcing deviant behavior. Such a situation illustrates why a teacher must be careful to reserve praise for a situation which warrants it. Otherwise, children will quickly observe that teacher attention and praise are not contingent on approved behavior.

V. Conclusions

Any conclusions derived from this project are highly tentative, because both baseline and experimental periods were too abbreviated and contained too many extraneous variables to produce any clearly valid or reliable results. However, findings do agree in kind with previous similar research which shows that with a change in classroom control techniques a teacher can produce significant behavioral changes within the classroom.

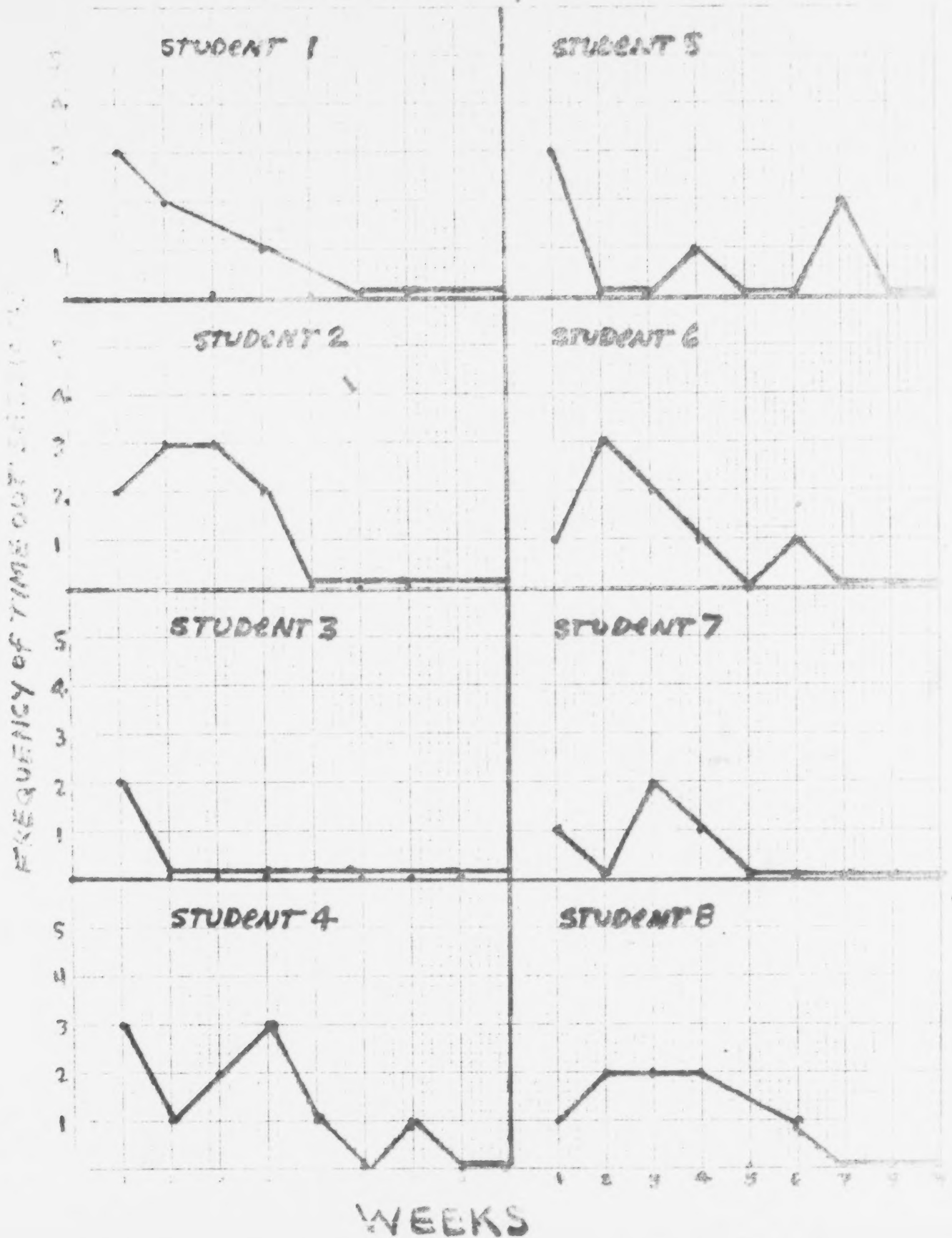
McINTYRE

% Intervals
Inappropriate
talking



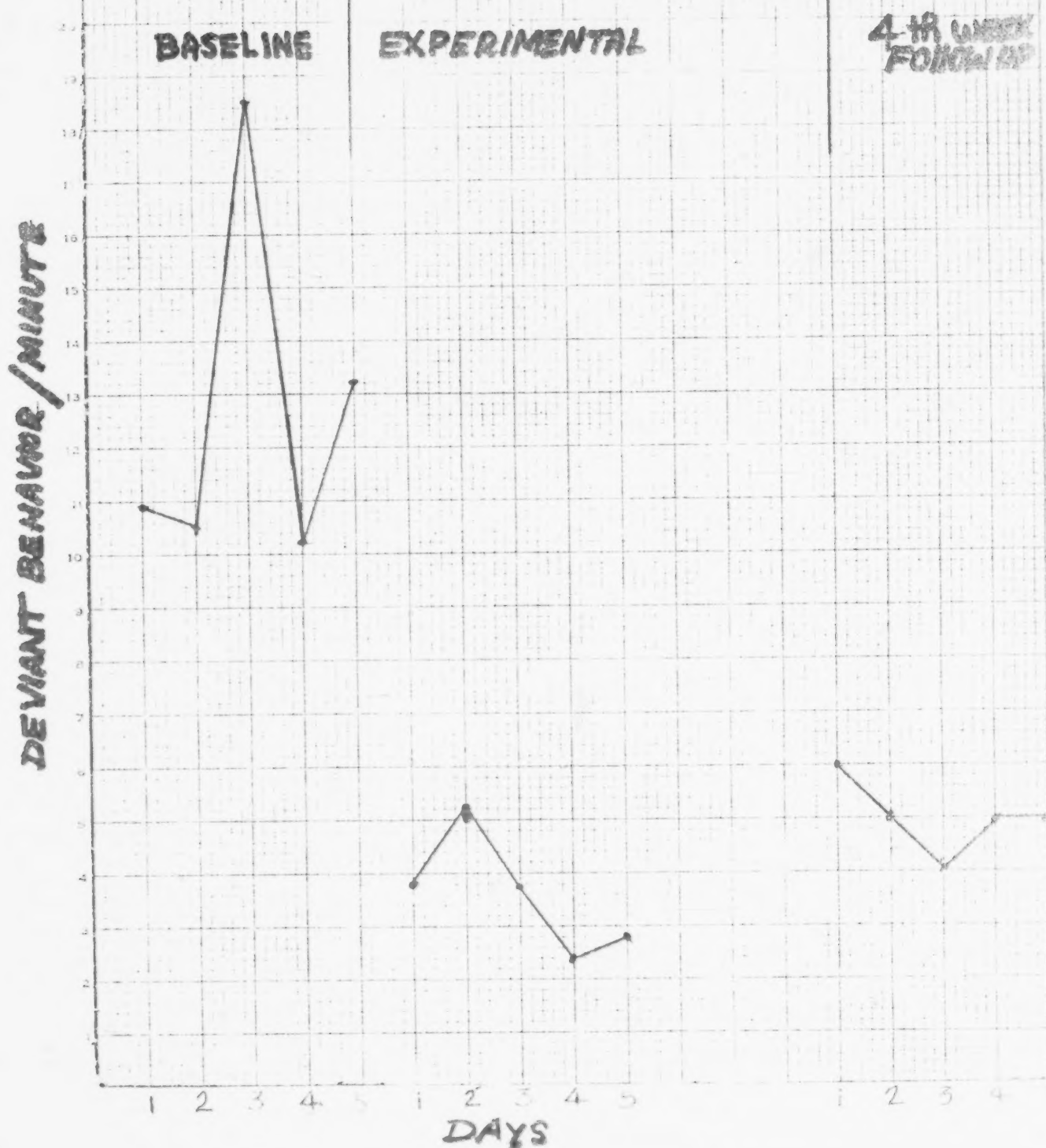
APPENDIX 3

CLASSROOM DISCIPLINE PROGRAM



APPENDIX 4

LUNCHROOM TOKEN SYSTEM



APPENDIX 5

Dissemination

newspaper articles
referring to the
TITLE III
Project

Workshop For Top Urbana Educators

The eighth annual Administrators' Workshop for Urbana school administrators will be held Thursday and Friday at Allerton House.

Theme for this year's workshop is "Improvement of Instruction through In-Service Programs." The general presentations and group discussions will relate to procedures which can be used in working with teachers in various in-service programs throughout the school year.

Dr. Ray H. Braun, superintendent of Urbana schools, will open the workshop with a keynote address at 9 a.m. Thursday.

"Strategies for In-Service

Programs" will be the first large group presentation given by Donald Holste, principal of Prairie School.

On Management

In the afternoon Thursday, David Phillips, Program Supervisor for Title III, will talk on "Classroom Management."

The staff for Project CUES, a Title III project designed to aid schools in Champaign County and five other counties in upgrading services to students, will be in charge of the Thursday evening program.

Discussion Friday morning will center on human relations, and "Another Look at Desegregation in Urbana."

Friday afternoon, William Fromm, principal of Urbana High School, will speak on "Student Activism and the Curriculum". This will be followed by a panel discussion of the topic.

Financial Picture

Mrs. Esther Blackburn, business manager for District 116, will make the final presentation as she explains the financial

picture as a result of legislation and negotiation.

"As a result of the workshop," Ralph Davis, assistant director of instruction, said, "it is the hope that with the Administrative staff and the teachers working together, new techniques and procedures will be explored which should increase the educational effectiveness for Urbana students."

Approximately 30 educators will be attending the workshop, including members of the central administrative staff, all elementary principals, all secondary principals and their assistants as well as consultants, directors and supervisors.

Urbana Expands Individual Instruction Programming

The Urbana school district has taken another step forward in progressive education with the expansion of its Individually Prescribed Instruction program into the intermediate grades.

Begun in 1965 at Yankee Ridge Elementary School with the help of an Illinois state grant for experimental programs, IPI has been confined to the primary grades. This fall Prairie School has started the program in the intermediate classes, with aid from federal funds.

Originally developed by the Learning Research and Development Center at the University of Pittsburgh, the system of individualized instruction is based on independent learning. Its objective is to produce individuals who realize that education occurs as a result of their own initiative and industry.

Human Element

The IPI system is somewhat like programmed learning, with the human element added. The student doesn't merely stop when the program tells him he has answered incorrectly; a teacher is always there to diagnose his difficulty and prescribe other learning sheets that will help him overcome his problem.

The teacher becomes a diagnostician, a prescription writer, and a tutor, rather than a person who provides information.

Basic to the success of the IPI approach are defining objectives so both teacher and student know exactly what is being taught; using a complete pre- and post-test procedure that helps teachers determine learning difficulties; and providing individual lessons written for each child for each objective.

Children correct their own worksheets when they are finished and have their tests scored as soon as they are completed. Each child's progress is studied continuously, to discover his learning problems.

The greatest strength of the program, besides the interest shown by parents, students and teachers, is its apparent success with all types of children. The slow learner, the talented child, and the average student respond to the IPI system.

Are Modified

Materials are received from the Research center in Pittsburgh and are modified to particular needs here. The individual lessons make clerical assistance and multiple lessons

on many levels necessary. To fill this need the district operates a duplication center that will produce an estimated 12 million sheets for the IPI program this school year.

More than 2,400 pupils are participating in the program in schools throughout Urbana, 895 of them for the first time. The IPI system has been established at Yankee Ridge, Hays, Prairie, Webber and Wiley Elementary Schools from one to five years. The program was begun at Leal, Lincoln-Thurnburn, Thomas Paine, and Washington schools this fall.

The IPI program requires in-service training for teachers to prepare them for the new system, and IPI is begun only when the teachers are ready to work with the method. All primary grades in a school may not use the system, but all pupils in any single classroom do study under IPI.

The district foresees a program similar to IPI being established in the junior high and high school, largely to be prepared for the students coming up from the lower grades who are used to it.

Individual Instruction For Three More Urbana Schools

By CATHIE BLAN

News-Gazette Staff Writer

First graders reporting to Washington, Thomas Paine and Lincoln-Thornburn schools in Urbana this year, will benefit from a program which has been successfully operating in other Urbana schools and which has been expanded to their classes.

The program, Individualized Prescribed Instruction (IPI), has been operating in grades first through third at Yankee Ridge, Prairie and Hays schools and in one second and one third grade class at Wiley and Weber schools which also use it for first grade classes.

Prairie School will be using the program in all six grades for math.

Reading and math are taught at these schools with the IPI

program. At the beginning of the year, all students in the program are tested in the two subjects and a level of achievement is determined for each.

The teacher then prescribes the next lesson for each student based on his past achievement. Each day a lesson appears in the student's folder and after he has completed it, the folder is collected by a clerk who grades the work and gives it to the teacher who prescribes the next day's lesson.

The clerk then goes to the "slot room" where sheets for each lesson are stored in slots, and pulls out the prescribed lesson for the individual student to work on the next day.

Another Lesson

If a student does not do well on a particular lesson, there is

always another lesson available which will help him. And if a student does well, he can continue advancing without being held back by classmates.

Although the program covers a great deal of material, only about one hour a day is taken up with folder work. The rest of the day, students work in a "normal" classroom situation.

The program was first conceived at the University of Pittsburgh in the early 60's and was adopted by several schools across the country as an experimental program.

The program was first inaugurated in Urbana in 1965, after Maurice Wilson, principal of Yankee Ridge School and some of the Yankee Ridge teachers attended a workshop in

Pittsburgh on the IPI program.

All attending the workshop were impressed with the materials and the results of the program.

In the fall of 1966, the IPI program was adopted for one first one second and one third grade class at the Yankee Ridge School.

Is Expanded

After the IPI proved to be successful, it was expanded to Wiley, Webber, Prairie and Hays schools.

Teachers and administrators both agree the program has been "highly successful," and that pupils have "benefitted greatly" from it.

Mrs. Arlene Willard, primary teacher at Yankee Ridge, was one of a group that attended the Pittsburgh workshop and was one of the first teachers to use the IPI.

"It's such a rewarding program," Mrs. Willard said enthusiastically. It takes the child where he is and he is permitted to progress at his own

rate. Each lesson is tailor-made for the child."

Mrs. Willard said that in a traditional classroom, "I couldn't give all of the students all the help they needed because of the time element. This is an answer to my dream," she added.

While the IPI has benefitted students, it is also a blessing for teachers since there are fewer behavioral problems when students all have work to do.

"I am sold on it," Mrs. Willard stated emphatically, "and I feel I am very fortunate to be teaching with this program."

Plan Expansion

Urbana administrators are also enthusiastic about the program which they hope to eventually expand to all primary grades in the system.

Over \$100,000 has been budgeted for the project, covering the cost of clerks, training and materials. Clerks are generally employed on a part-time basis, working 2½ to 3

hours a day per one hour of classroom work.

Training of clerks and teachers is a very essential prerequisite for working with the program. Teachers in classes where the program has expanded will observe other classes where the IPI has been used and will talk with experienced instructors in the program before they actually work with it in their classes.

Both clerks and teachers must become familiar with the coding of lessons and with the language of prescriptions.

But those who have worked with the program all agree the extra effort is worth it. "It's wonderful," Mrs. Willard said, and she hopes to see it expanded throughout the country.

The only other school system in Illinois using and demonstrating this experimental program is Elk Grove.

Behavioral Principles Marquette Subject

The use of behavioral principles in the school and home will be discussed at Marquette School in Champaign at 7:30 p.m. Thursday, at the regular meeting of the PTA.

Speaker will be David Phillips, program supervisor of the Title III project demonstration center.

The system which Phillips will explain is based primarily on rewarding appropriate behavior and minimizing the use of punishment.

Find Title III Program Has Strong Start

After eliminating some of the minor problems in this year's Title III project at Prairie School which follows the program of individualized prescribed instruction, District 116 superintendent Ray Braun predicted that the program will be even more successful next year.

According to the report submitted by Braun to the school board Monday night, the original proposal called for beginning with one lower-primary class this year, expanding to all lower-primary class next year as well as to a kindergarten and a middle-primary class.

The program was begun at Prairie School since IPI trained teachers were available. A third lower-primary teacher and a kindergarten teacher in Webber School are also using the individualized instruction.

In making the report the superintendent noted that in the three lower-primary classes with whom the administration had been involved it was found that without adequate kindergarten preparation of the children for the program the teachers were overwhelmed with the task requirements. In these cases it was necessary to use the curriculum assistants to work with a group of children in each class until the skills necessary for individualized work were developed.

To eliminate the problem next year the administration has brought all kindergartens into the program at this time. A detailed comparative evaluation of the program's effectiveness will be possible by next year.

The current program is reported to be progressing in spite of difficulties in obtaining materials and an in-service training workshop for 15-20 teachers who are already in or who are going into IPI. The first workshop involves teachers from Yankee Ridge, Webber and Prairie Schools, two psychologists, and one remedial reading teacher.

Dr. Wesley Becker of the University of Illinois, is acting as program supervisor.

Urbana Plan For Schools Is Approved

The U.S. Office of Education has approved an individualized instruction demonstration project sponsored by the Urbana Public Schools, Cong. William L. Springer announced Friday. R. H. Braun, Urbana superintendent of schools, requested \$96,738 for the project, but Springer said the exact amount of the federal grant will be determined after negotiations on details of the project.

The project was approved under Title III of the Elementary and Secondary Education Act. Title III authorizes use of federal funds to assist schools in developing new education methods that may serve as models for regular school programs.

The Urbana plan calls for special classes at Prairie School, emphasizing individual instruction. It also involves the training of special teachers in problem-solving, group discussion and elementary school guidance techniques.

Individualized Program At Prairie Based On Use Of Modern Theories

By CAROLYN MARSHALL
News-Gazette Staff Writer

One of the most progressive programs ever to be offered in Urbana School District 116 is the Individualized Instruction Demonstration Project at Prairie School which has entered its second of three years. The program is financed under Title III of the National Education Act.

Donald Holste, project director and Prairie School principal, indicated the purpose of the program is to show how behavioral principles and current technology can be applied to individualize instruction and overcome motivational problems of many elementary students.

Funds for the second year of the program total \$107,807 and will be used to cover costs of materials, in-service training and personnel, both certified and noncertified.

Since the first grant for the project was made available to the school July 1, 1967, Dr. Wesley Becker, professor of Psychology and Education at the University of Illinois, has served as program supervisor and in-service training instructor.

He is recognized by many throughout the United States as a leader in developing applications of behavioral principles in the classroom and has conducted many workshops, colloquia and lectures on the topic throughout this country and Canada.

Becker will continue with the program in 1968-69 as technical adviser and will assist in both the training and developmental phases originated during the first year.

Taking his place as program supervisor will be Dr. David Phillips, a graduate of Arizona State University, who joined the project staff in June. He has worked previously in Arizona with programs similar to that of the Title III project at Prairie.

Modern Theories

The program at Prairie is based on a number of modern theories which are explained in a report prepared by Holste.

In a statement of need it is first stated that learning is an individual matter which is most effectively accomplished in small functional steps with an emphasis on immediate and positive reinforcement rather than on delayed reinforcement or punishment.

Upgraded primary classes, providing for individual assignments, team teaching, pro-

emphasis on letter grades and reflect current trends toward individualizing the teaching process.

It is also assumed that any type of failing at the elementary level extracts a high price at later levels and a failure in basic communication skills is especially costly.

In the past about 20 per cent of the children at Prairie School failed to leave first grade as readers, according to the report. In other words these children required special training in reading before they could work assignments on their own in second grade tests and workbooks.

With new technology and teaching methods, however, it is now possible for every child to leave first grade as a "reader." As a result of research it is believed that failure in reading can no longer be blamed on the child.

"The responsibility for non-achievement is most appropriately placed on inadequate training procedures," says the report.

Three Class Levels

To meet these problems and learn more about them, the Prairie School project was established to introduce new procedures into the classroom. Pilot classrooms were set up for the first three class levels with the emphasis in individualized instruction placed on development of reading skills, and problem-solving behaviors.

During the first year of the program in 1967-68 a number of procedures were developed. Instruction was individualized in beginning reading and math skills for kindergarten children.

Tutoring for kindergarten and primary children who could not function adequately in the regular classroom setting was begun. These procedures made it possible for para-professionals to give 50 to 60 children extensive training on a daily basis.

The Individually Prescribed Instruction program (IPI) used in several other Urbana schools was revised and brought up to date to complement the Prairie School project. Master tapes also have been developed for the audio components in reading and math which serve to further the individualization of instruction.

Last year approximately 30 teachers, psychologists and social workers were trained in the techniques of the program. With the cooperation of the Summer Institute Program June 17 to July 12, in addition to special

the past school year, all kindergarten teachers, lower primary teachers, three middle primary teachers and an upper primary teacher at Prairie were trained in the use of IPI materials and behavioral principles.

These teachers, who account for 13 classes, will use the program during the coming school year.

Three major objectives of the project have been established for the second year, according to Holste.

Combined Program

First, an attempt will be made to determine how successful the combined program is in the teaching of beginning reading and math skills. If the program is found to be significantly better than that used in other Urbana schools, a second objective will be to determine whether or not it will be possible to utilize it in other schools of the district with the present budget limitations.

A third point to be considered is how other interested schools can most efficiently incorporate the program into their existing structures.

Other improvements and modifications are also being developed for use during the coming year. Additional materials will be added to supplement the IPI portion of the program.

Plans have also been made to use a special "supportive services suite" to utilize all special education personnel cooperatively for the needs of younger children and all children who enter the school during the school year. Video taped training lessons will be developed for use of teacher.

The kindergarten program will be monitored and evaluated to demonstrate how the program may be effectively originated at that level. Parents of the kindergarten and lower primary pupils will be further motivated

to support the program at home by becoming more effective teachers of their own children.

Lastly, the total teacher training program will be expanded throughout 1968-69.

Holste indicated he is pleased thus far with the progress of the Title III project and other programs of the school. "We're trying to make Prairie a child-oriented school," he said. "We experienced an excellent attendance for the last year, especially considering that it tends to be low in this particular district."

SUNDAY, AUGUST 25, 1968

Receive Funds For 2nd Year Of Title III

By CAROLYN MARSHALL
News-Gazette Staff Writer

The Title III project on behavior modification centered at Prairie School under the supervision of Donald Holste and Dr. Wesley Becker will continue its second year with funds from the U.S. Office of Education totaling \$107,897.

During the remainder of the summer a study of evaluation and objectives of the program further developed during the coming year.

According to a report given the Urbana Board of Education by Holste, plans have been made to use a special "supportive services suite" to utilize all special educational personnel cooperatively for the needs of younger children and all children who enter the school during the school year.

The kindergarten program will be carefully monitored and evaluated to demonstrate how the program can be effectively originated at that level.

Videotape training lesson will be developed for teachers to build sequences of "how to" and "how not to do it" with respect to critical phases of the program.

The total teacher - training program will also be expanded during the coming year and parents of kindergarten and lower primary children will be encouraged to support the program at home by becoming more effective teachers of their youngsters.

New Staffer

David Phillips, who will soon receive his Ph.D. from Arizona State in educational psychology, will join the staff to work as a program supervisor.

Holste reported a number of developments in the program during the 1967-68 school year.

First, procedures have been developed for individualizing instruction in beginning reading and math skills for kindergarten children.

Procedures have also been developed for tutoring kindergarten and primary children who cannot function adequately in the regular classroom setting. Under the program, para - professionals can handle the task and 30 to 60 children can be given intensive training on a daily basis at a cost comparable to the hiring of one regular teacher.

A third development in the program is the revision of the components of Individually Prescribed Instruction math and reading which have been brought up to date with special modifications.

Another development is the use of master tapes for the audio components in reading and math. The tapes will be available to all teachers using the program during 1968-69.

30 Staffers

This fall, students in the program will have about 30 teachers, psychologists and social workers who have been trained in the systematic utilization of behavioral principles.

During the summer institute at Prairie School June 17 to July 12, along with special released time training during the past school year, all kindergarten, and many primary teachers at Prairie have been trained in the use of IPI materials and the use of behavioral principles.

All these teachers will be using the program in their classrooms in 1968 - 69, according to Holste.

Approximately \$30,000 was made available to the Urbana Schools for the purchase of equipment and supplies as part of the first year's grant.

Urbana District 116 is also participating in a Title II project for a six - county area sponsored by the Champaign Unit 4 District.

The project is called Project CUES Center for Upgrading Educational Services.

9/1/68

PUPIL TUTOR

Prairie School pupils benefiting from the school's tutoring project include Ed (left), a kindergarten (left), a kindergarten.

garden pupil. Dean Cole, a 6th grade pupil there, is tutoring him. Both sixth graders and kindergarten gain from the

experience according to David Phillips. This is the story.

Special Project at Prairie School

Sixth Grade Pupils Tutor

By Jean Andrews

Sixth grade pupils at Prairie School have become tutors for Title III kindergarten youngsters in a program that emphasizes praise for good behavior of the younger ones.

What they are doing is one part of a federally funded project at the school "to show how behavioral principles and current educational technology can be applied to individualize instruction and overcome motivation problems."

That is how David Phillips,

the responses and praise correct responses, all of which are essential to efficient learning Phillips said.

The sixth graders, he said, are instructed to ignore mo "unwanted behavior" that a kindergarten child displays, but praise correct responses and a proper behavior.

The teacher supervises the over-all tutoring project and video recording is made of each 30-minute session. Then the sixth graders review, via tape, their efforts. Pinned out in them are examples of the use of praise and suggestions at made for improved ways of dealing with specific problems.

"Needless to say, the older children get very excited seeing themselves in the role of teacher and this seems to be very motivating," Phillips said. Teachers, at first reluctant to try the system, have become enthusiastic about it after one week, according to Phillips.

Kindergarten teachers have reported that children who formerly never finished their work now are able to stay with task and complete them.

Sixth grade teachers report that sixth grade pupils, learning what it is like to be a teacher, have commented on the problems of teachers and have changed their attitude about the teacher's role.

A systematic evaluation of the effects of the program on both groups of children is planned.

10/1/68



Pupil Behavior Studied

Teaching Techniques Tested in Urbana.

Preliminary plans are being made at Prairie School for a \$96,728 project to foster individualized teaching in public schools.

Observers will keep day - by-day records of pupil behavior and how it is motivated by the various techniques of teaching.

From this data, local teachers will study the techniques that motivate learning and good behavior in seminars and workshops to be held in the spring.

Donald Holste, principal, said some observations now are being recorded on pupil behavior so there will be a base to judge future progress.

Pupil behavior is expected to improve as teaching techniques get better, Holste said.

About 150 children, still to be selected, will be involved in class or pupil record taking by the middle of November. The project also involves curriculum revision.

"The traditional textbooks and published materials are not applicable to the individualized instruction we are after," Holste said.

The project calls for program development the first year and

workshops to release the results to other state schools in the second and third years.

Dr. Wesley Becker, University of Illinois professor of psychology, is director of the program.



starting its third year, is the newest elementary school in the District and will attract the pupils the largest of whom are rapidly growing neighborhoods of young families. More than two-thirds of the pupils are in kindergarten and the primary grades, the years when failure to learn basic skills can exert a high price later in a child's education. A school committed to building an educational program with new techniques and new materials. It begins to extend use of the individualized principles involved in individualized instruction described in the Van Kleeck Institute's book and teaching and mathematics curriculum is teaching in a more individualized manner.

Prairie faces typical problems with children who are not motivated to study to learn, or even to attend school. In the classroom, children show their lack of interest in problem behavior that keeps them and their classmates from learning. Today every child in a regular classroom should finish the first year of school a reader. Children probably fail to learn to read because they have not learned to work in a classroom rather than because they lack the ability.

An Individualized Instruction Demonstration Project at Prairie will test current research to find out how teachers use new ideas to help children want to learn and overcome behavior problems which interfere with classroom learning. The three-year project, in cooperation with the University under a federal grant will begin in some primary classes and be extended after that.

Studies at Prairie and Thomas Paine last year will be the starting point for the controlled experiment in the project. Two studies with well-behaved classes showed that the teacher's criticism can create classroom disturbances rather than eliminate them. In one class, the more often the teacher said, "Sit down, Johnny," the more often the children stood up. When the teacher praised those who stayed seated and ignored those who stood up, things got better. When she reprimanded them,

Prairie School

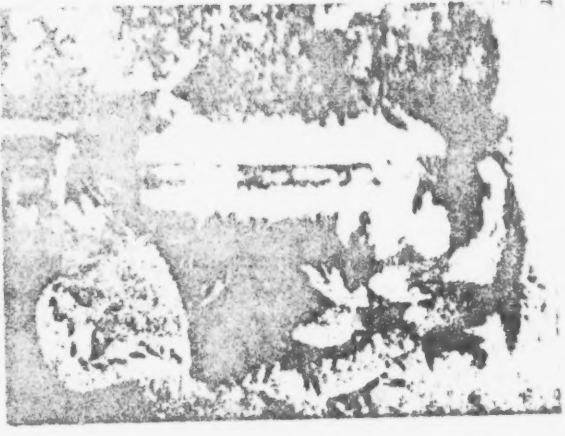
children went back to disruptive behavior. A simple system of praise and small prizes cut unruly behavior among 17 problem children from 84 of 25 per cent to less than 10. It permitted the teacher to teach the whole group in a way that had been impossible. The children learned to respond to praise. The teacher was no longer harassed, tense and distraught but smiling, relaxed, and effective.

At the class had 13 fourth graders, 10 of whom had failed at least one grade. Many children did not pay attention. Lessons were only about one-fourth of the group. By November, the teacher was shouting her way as the class got restless, although she had been a stimulating and effective teacher. She individualized instruction and put progress charts on the blackboard. Then she gave the children 15 plastic tokens each morning. Each could be exchanged for one minute in the activity corner, if they learned their value. The tokens were given for improvement in academic and social behavior. The children's work improved steadily, especially in reading. It did not fall off when the teacher removed the token system because she had learned to use praise effectively and to assign tasks the children could complete successfully.

These and other techniques will be used in the experimental class at Prairie this fall. Dr. Wesley C. Becker, professor of psychology and education at the University of Illinois, and others will work with the

Prairie staff during the fall semester will be trained in working with the children in the study project.

Kathleen Oardiff and the 14 children and teachers are working on the study project in the classroom at Prairie school.



St. Louis Blue-Print

One Hundred and Fifteen Years of Public Service

© 1957, Globe-Democrat Publishing Co.

St. Louis, Monday Morning, November 20, 1967—4 Sections—48 Pages

U.S. SOLD ON INDIVIDUALIZED PRESCRIBED INSTRUCTION

Will New Concept Revolutionize Education

By Associated Press

WASHINGTON—Preservers have come up with a new concept of learning which federal officials are convinced has potential for revolutionizing the nation's educational system in the years ahead.

It is called Individually Prescribed Instruction (IPI), and it means that each student works mostly on his own with materials specially suited for him.

Dr. Richard L. Bright, director of research for the U.S. Office of Education, calls it the greatest educational breakthrough of recent times. The claims he makes for IPI explain why federal officials are so sold on it.

SOME OF CLAIMS

Here are some of the claims that would lead more and more schools of all ability levels would learn more. And

they would enjoy school far more, thus reducing discipline problems.

—There would be no need for compensatory education for deprived children, on which the federal government now is spending \$1 billion of its \$4 billion annual education budget.

—The dropout problem would largely be solved.

—Teachers would cease being mere dispensers of information and would be free to tutor students individually and encourage youngsters to think and to express themselves.

—Parents could take children out of school for vacations any time during the year without disrupting their learning process.

INDIVIDUALIZED INSTRUCTIONS

Although it sounds like something for the distant future, Dr. Bright predicts that IPI will be ready for partial use throughout the country in two or three years.

Within 15 years, says Secretary John W. Gardner of the

System?

Dr. Becker explains that the system developed mainly by the University of Pittsburgh researchers with federal help, needs more refinement before it is ready for general use. But he said in a telephone interview that laboratory officials may try another trial schools enter the program next year.

The main limitation now is the instructional materials, said Becker, which are mainly in booklet form.

IPI requires vast quantities of materials for teachers to use in order to fulfill the various learning needs of individual students. Teachers find out what the students need through constant testing. Do current tests, pre-tests, tests scheduled in

the middle and post-tests. The materials are in booklet form, and it might be possible to use the same a test.

from to make a program. It's de-

vised so the student almost always knows the right response — and is told so immediately.

Two St. Louis area school superintendents, Dr. Martin B. Carrigan of University City and Dr. W. A. Shannon of Kirkwood, agreed that individually prescribed instruction was not a panacea for everything under the educational sky.

"One thing you have to watch out for is that it isn't one teacher for one pupil," Dr. Carrigan said, citing the expense in some and matter involved in such an arrangement.

IMPOSSIBLE TASK

"I think to actually do it in a situation where a teacher has more than 15 youngsters is an impossible task," Dr. Shannon said.

Dr. Shannon questioned whether IPI would lack the dropout problem. He quickly added that, with the system, the ability to compare what one child is doing as opposed to another child would be taken away by individualized instruction.

Dr. Carrigan said, "We are huge involved in individualized instruction." Dr. Shannon said he believed schools were "not extensively" using IPI.

Department of Health, Education and Welfare, "virtually all instruction in the nation will be individualized instruction." The U.S. commissioner of education, Harold Howe II, says research on IPI holds "the promise that a truly individualized education will soon be possible for each child."

So far, the system has undergone through trials in only one school, Oakleaf Elementary in the Rainbow White suburb of Pittsburgh, where it has been in use three years. Five more schools adopted the system last year and 21 more on this fall.

NEED REFINEMENT

Our problem right now is to turn people on to the system. Dr. James W. Becker, director of the U.S. Office of Educational regional education, indicated in the report which helps the schools adopting it.

VERY PLEASED

A third superintendent, Dr. George W. Brown of Westover, said individually prescribed instructional materials had been used in English and writing for several years. He said he and his associates are very much pleased with it. But there will be a great deal of work toward individualizing

Urbana Plan For Schools Is Approved

The U. S. Office of Education has approved an individualized instruction demonstration project sponsored by the Urbana Public Schools, Cong. William L. Springer announced Friday. R. H. Braun, Urbana superintendent of schools, requested \$36,738 for the project, but Springer said the exact amount of the federal grant will be determined after negotiations on details of the project.

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Dr. Wesley Becker of the University of Illinois is acting as program supervisor.

Six-Week Institute Starting In Urbana On IPI Training

By JULIE CANNON
News-Gazette Staff Writer

The Individually Prescribed Instruction method (IPI) is elementary education means that each child assumes the responsibility for his own learning.

The teacher no longer functions as the imparter of information but rather guides each child as he progresses at his own pace through a programmed series of materials.

A group of 12 primary teachers from all over Illinois, including 15 from Urbana schools, began a six-week institute this week at Urbana's Wiley School, to be returned to teach reading and mathematics by the new IPI method.

Teachers and supervisors attending the IPI summer institute will teach both reading and mathematics in summer school primary classes and at sessions at Wiley School.

The institute is designed to change the behavior and strategies of teachers in the classroom.

Teach Groups

Traditionally, teachers have been trained to teach groups of children as a class or more recently in classes divided into ability groups. Joseph L. Clark, director of the institute said,

IPI recognizes that children learn at different rates and have different abilities.

In an IPI reading or math program, each child works on his own with frequent individual conferences with the teacher to guide and evaluate his progress.

The child progresses through a series of workbooks and a file of thousands of loose-leaf lesson sheets arranged and coded by levels to teach basic skills in a carefully ordered sequence.

A child is pre-tested and begins the IPI program at his level of mastery of reading or math skills. As often as possible the teacher goes over the child's work with him.

The teacher makes a diagnosis of his progress and enters a

prescription for each child's work much as a doctor diagnoses an illness. Institute officials said.

Use Analogy

A physician may give the same prescription to several patients but he does not decide that this is the work for sore throats and prescribe the same medicine for all patients, the analogy continues.

The diagnostic and prescription process is the technique by which the teacher is able to work individually with each child. A teacher is able to judge whether a child is having trouble in learning a particular skill and if so she assigns him extra work on that skill until he masters it.

As a child finishes each unit of work he takes a test and the teacher evaluates his work. If he completes the test satisfactorily he moves on to the next level.

According to institute staff members, the principal adjustment the teacher must make in IPI is in the use of his time. Customarily, the teacher works with groups in the whole class during the day and individually with the children in whatever time he can find before and after school.

In IPI the teacher spends much of the day working individually with children in small groups while the other students work by themselves. After school the teacher checks the children's work and enters "prescriptions."

Many Records

IPI requires a great deal of record keeping. A clerk is assigned to help the teacher with record keeping and other clerical work.

"I have studied and dreamed of a method of teaching that would fit the individual needs of children," Mrs. Arlene Willard, a Yankee Ridge primary teacher said.

We do not see that individually programmed instruction is the new answer, but it does provide for the needs and

interest of each child and gives the teacher materials and techniques for meeting these needs and stimulating the child's interest, she said.

The progress of children in IPI classes during the summer institute is being compared with the progress of children in control groups in other classes, and the IPI program is constantly being evaluated and revised as more and more schools work with it, Clark said.

In Urbana School District 136, both Yankee Ridge and Wiley have been demonstration schools for pilot studies for the IPI program originally developed at the Learning Research and Development Center at the University of Pittsburgh.

Will Expand

The program will be expanded to two additional Urbana schools in the fall including three primary classes at Webster, and a demonstration project at Prairie.

The summer institute sponsored and financed by the Department of Program Development for Gifted Children of the State of Illinois was proposed by Clark, institute director and coordinator for the program for gifted children in Urbana schools.

The institute staff includes Marilyn Banner, Wiley school primary teacher; Mrs. Arlene Willard, Mrs. Myrna Wentz, and Mrs. Louise Penn, Yankee Ridge primary teachers; and Maurice Wilcox, director of the elementary division of summer school and principal of Yankee Ridge.

The institute is a cooperative project with the University of Illinois. Dr. Walter Moore, professor of elementary education, is in charge of the project for the University.

Prairie School Tests New Motivation Of Students

By JULIE CANNON
News-Gazette Staff Writer

Urbana School District 116 has received notice of a \$96,738 grant awarded to the district by the federal Office of Education to initiate an Individualized Instruction Demonstration project at Prairie School.

"Under this project we want to work out procedures to motivate youngsters coming into the first grade. We want to make school a positive place for them," Wesley C. Becker, UI professor of psychology and education and project author, said.

Ten to fifteen per cent of the youngsters coming into first grade are not susceptible to getting started on instructional material, Dr. Becker estimated.

During the 1967-68 school year a first grade class at Prairie School will be developed as a demonstration class to show how behavioral principles and current technology can be applied to individualize instruction and to overcome common motivational problems in the elementary classroom.

In applying current technology to the classroom the project will make use of programmed instruction materials in which the subject to be learned is broken down into small steps and the child can readily see his accomplishments.

Other advances in the technology of education available for use in the project classroom include tape recorders, teaching machines, and the language master.

In addition to using the teaching equipment available through advanced educational technology, the project will stress the methods of motivating the child who is not motivated by these materials.

Working on the principle that all children like attention and will do to get it one way or another, the teacher in the project classroom will use a positive

approach to behavioral reinforcement.

Instead of getting the teacher's attention for doing the wrong thing, the child will be given praise for doing the right thing.

A point system will be used in which the child will receive points for his good behavior, and these points can be exchanged for a prize or a longer recess.

Dr. Becker told about a class at Hays School where the point system for rewards was tried. The class had an 80 per cent desirable behavior record which dropped to under five per cent when the youngsters started earning prizes with points for good behavior.

"Instead of jumping on the behavior she does not like, the teacher establishes a pattern of classroom behavior that she

expects from the class and sets rewards that motivate the class toward achieving it," Donald E. Holste, principal of Prairie School and project director, said.

To determine the effectiveness of specific teaching operations, daily records of each child's progress in the academic program will be kept.

Another innovative feature of the individualized instruction demonstration project will be the use of observers who will evaluate the effectiveness of specific techniques.

"We will set up a series of behavior patterns and code them. For instance a student's turning around in his seat will be symbolized by the observer with a curved arrow," Dr. Becker said.

The use of the observation procedure is a sensitive measuring device and permits immediate feedback to the teacher enabling her to select the teaching technique most effective for her, Dr. Becker added.

As well as establishing a demonstration class, the project has a teacher training phase. Teacher training will occur within the demonstration class itself.

In service training of the remaining teachers at Prairie School in applying behavior principles to their classrooms, will be accomplished through a continuing workshop under the direction of Dr. Becker and other personnel at the University.

The timetable for the three year project is as follows: The 1967-68 school year, a single first grade class at Prairie; 1968-69 school year, one second grade class, all first grades, and one kindergarten class at Prairie; 1969-1970 school year, all second grades, first grades, and kindergarten classes and one third grade at Prairie School.

"Beyond this, if the program is successful it will be extended district wide," Holste said.

The \$96,738 grant covers expenses of the project for the first year. The federal funds will permit the hiring of personnel to function as classroom observers, secretarial help, consultant personnel, and curriculum assistants.

The project, jointly operated by the Urbana Schools and the University of Illinois, will be headed by Holste as project director.

A principal supervisor who will be responsible for the day to day operation of the project has yet to be hired.

A steering committee will meet once a week throughout the school year to review the progress of the project.

Steering committee members are Dr. Becker; Sidney W. Bijou, professor of psychology and special education and director of the UI Child Behavior Laboratory; Theodore Manolakes, associate professor of elementary education; and Robert Peterson, research assistant professor of psychology.

COMMENTS AND DESCRIPTION CONCERNING INDIVIDUALIZATION AT PRAIRIE SCHOOL

In an effort to keep all interested people informed of the activities at Prairie School and the reasons why certain procedures, materials and activities are used, we present this overview.

Our main concern is with the individual differences which exist among children. Traditionally, schools have done little about this except talk. Here at Prairie we recognize the differing abilities of children and this allows us to adjust the teaching materials to the child. A child is continually presented material which is challenging to him but not so difficult that he fails it and becomes discouraged.

Our I.P.I. materials present increasingly more difficult work to the child in such a way as to allow each child to proceed without discouragement or boredom.

In an effort to have the children more effectively use their time while in school, we have stressed those factors which have been proven to increase their good classroom behavior. These techniques stress a positive approach with the children. In those isolated instances where a child misbehaves to a degree that is disruptive, we have procedures which again have proven effective both here and in other schools. We simply place the child who is disruptive where his peers cannot give him attention for misbehaving. This means sliding the child's desk into a corner for a few minutes or having the child sit quietly in another room for a period of time, until he is calm and ready to go back to work.

We do not tolerate disruptive behavior in the class. In fact, we are so interested in reducing it we have used these procedures whereas many schools don't have any systematic approach to the problem. Also, it has been proven time and again that one of the best ways to reduce "show off" behavior is to ignore it. We do this regularly. Our teachers ignore and ask the cooperation of other children on reducing the number of problems resulting from this kind of activity.

When the children behave appropriately which is about 99% of the time, they are given attention by the teacher, thus letting the child know that she likes that kind of behavior and wants to encourage it.

Class rules are stated for each room so that the children know what is expected of them. This alone contributes to the program, but more importantly the teachers enforce the class rules.

Some people get the mistaken impression that our program is based on permissiveness and a lack of structure. Quite on the contrary, we are more disciplined than most schools. However, we are continually attempting to teach the children such things as how to work independently, being responsible for their own behavior, good citizenship and manners. Many of the children have earned the privilege of getting their own materials from the material center or proceeding to other activities on their own without direct supervision. These activities are however, monitored so that we know how the children are doing. The I.P.I. program itself produces a lot of activity in the room, all of which is extremely beneficial to the child. The student's work is graded immediately, the child then moves on to the teacher who then considers the child's performance and determines the next step for this particular child.

The child may then proceed to another room or part of the room for further activities, all of which are geared to him personally. Consequently, a casual visitor who does not fully understand the system may falsely conclude that the activity represents wasted time, which it certainly is not.

Many children in all schools are poorly motivated. This is the result of many things, some of which are: the way the parents emphasize learning, the child's peer group, the materials that the school provides, the teachers, etc. One of the things that all highly motivated children have in common is that in their past someone has given him attention for learning. This attention can take many forms like praise, an allowance, a smile, a pat on the back, etc. People who are self-motivated have learned to be that way as the result of this attention. Our goal is not only to help these children who come to us motivated, but those children who were not fortunate enough to have learned this already. To teach them to be self motivated, we attempt to give them attention for things like trying hard, completing work, doing things correctly, etc. We give all children attention for desirable behavior. Those children who need more because of a past history of not having received it, get more. As in all our procedures, we are attempting to meet the individual needs of the children. In some isolated cases where the child is especially deficient in self motivation, we may reward him in more material ways. This is done only because all other alternatives have been ineffective and our only other choice is to let him waste his time. This is clearly not in anyone's best interest. Another alternative would be to threaten the child. This approach has so many bad side effects associated with it, that it is worse than the original problem. In all cases where material rewards are used they are phased out as quickly as possible. They are used only to initially strengthen other things like praise, teacher attention, etc., as effective motivators. All of us are to some degree a product of these normal social motivators. To say that a person should not have to rely on these to motivate someone is missing the point. The fact is, people are taught to be self motivated and this is a step in that direction. We can only work with the children the way they come to school.

Prairie School is model in new teaching methods

By Dianne Rowland
Of The Courier

When Prairie School in Urbana began its unusual teaching methods in 1938, its second year in operation, many parents, teachers and students viewed the adventurous learning experience with apprehension.

Grades were broken down; instruction was individualized; educable mentally handicapped children were placed with educationally retarded and average children in the same classrooms and wide use was made of non-certified personnel.

These endeavors were expanded with a grant received in July, 1967, from Title III of the Elementary and Secondary Education Act, which will continue to provide funds through June 30, 1970.

Today, parents with children in the program at Prairie cannot say enough good about it and about the attitude changes in their children.

Requests have flooded the school from several community agencies and families living outside the attendance area, and from other schools in the surrounding communities for Prairie to accept children who have serious problems of social adjustment and academic failure.

Educators from around the country have visited the school and at least 50 Urbana teachers have taken the course in behavior modification at the U. of I. offered by David Phillips, Title III program supervisor at Prairie.

Attendance increase

When the school opened in the fall of 1966, Prairie had one of the lowest average daily attendance records in District 116. By 1968-69 it ranked near the top of the list with an average daily rate of about 96 percent.

According to Phillips, the systematic use of programmed reading materials and the maintenance of on task behavior in the classroom with the support of learning services has virtually eliminated the non-reader from the primary age groups including those usually classified as educable mentally handicapped.

reading, math and language with use of the Distar reading materials, the McGraw-Hill programmed readers and the Individually Prescribed Instructional materials in both reading and math.

Team teaching has been encouraged at all levels and much use has been made of non-certified personnel, some of whom are qualified to teach within an area assigned by the teacher without making evaluation judgments.

Tutoring center

A tutoring center, staffed by a remedial reading teacher, a teacher for the socially maladjusted children and by aides, carries on work usually on a one-to-one or small group basis for those children needing extra help about 45 minutes per day for each child.

"The Title III, ESEA, grant must terminate after three years, which in this case is June 30," Phillips said. "The school district is currently spending about \$500,000 annually to operate Prairie. During the 1969-70 school year, Title III provided \$90,000 above the district's

expenditure to help the school serve as a demonstration center, to develop materials, and provide additional training for teachers.

"To continue the program at its present level would require about \$40,000 annually or less than 10 per cent more than the current budget. To continue the program at its present level and also to provide staff for continuing modification and service as a demonstration center would require about \$80,000 above the regular budget, or an increase of 16 per cent," Phillips continued.

"Myself, other members of the staff and those acquainted with the project hope it might be possible to continue the demonstration center, as we feel much remains to be done."

He added, "Although the district has made a tentative commitment to continue portions of the program found most valuable, we hope successes achieved are not allowed to dissipate because of a lack of funds which constitute such a small amount above that now being spent."

Just what has Prairie done to achieve such success in less than five years?

"Although many people think we are conducting some sort of experiment with the children, ours is not an experimental program," Phillips said in a recent interview. "All the procedures we use have been tested before. What is unique is use of the system on a large scale."

The basic philosophy behind the program, Phillips said, is to analyze what you want to teach a child and then systematically teach it to him.

"So many children have been doomed to failure by their back grounds. If they do not learn early in their school career, they become more educationally retarded the higher they go. It is a type of cumulative failure."

Here at Prairie all children are placed in classes according to their chronological age and each works at his own level. There are no labels such as educable mentally handicapped. I believe that in 99 per cent of the time all a low IQ means is that the child hasn't learned the answers to the questions.

Phillips said he is trying to change the thinking of the leaders of the district in this area and others.

"I am a psychologist rather than an educator and hope I can bring a fresh viewpoint to the school system," he said.

Although Prairie is essentially a community neighborhood school, Phillips said the area it serves is basically lower-middle class with a highly mobile population which "sends more than the average number of children to school who have difficulty maintaining behavior expected by most teachers and who have difficulty learning."

Approximately 730 children are enrolled in the school this year, although not all of these were in the Title II program. Most concentration is placed on the primary grades, including kindergarten, although the fourth, fifth and sixth grades were individualized for the first time in September.

"Teachers have been taught how to use praise and other reinforcers to more effectively manage their classroom, and that the best way to get rid of minor infractions is to ignore them. Major infractions where a child could harm himself or others or disrupt the class is punished by the old but extremely effective method of isolating the child from peer attention," Phillips said.

Instruction is individualized in

NEW EDUCATIONAL PROGRAM IMPLEMENTED AT PRAIRIE SCHOOL

In addition to the Title III program at Prairie School which uses the I.P.I. materials and other individualized procedures, the Bereiter-Engelmann (B-E) Language and Arithmetic Program is being introduced. The B-E Program is in one kindergarten and one first grade class. The purpose of implementing the program is to offer a wider variety of early childhood education programs to better meet the individual needs of the children. The Bereiter-Engelmann (B-E) Program was developed at the University of Illinois as a systematic approach to the teaching of Reading, Language and Arithmetic.

One of the basic philosophies of the program is that all children can learn. When children don't learn, they simply have not been taught properly. The educational system has failed, not the child.

A careful analysis of the concepts involved in education is the starting point of this program. In order to teach any concept well, so that it is a functional tool for the individual, the skill must be carefully analyzed and broken down into its component parts. These parts are then carefully sequenced so that one skill builds on the next. A child may not proceed until he can demonstrate mastery at each step. The program emphasizes the small group approach, with the teacher instructing orally to a group of 5-8 children for a 30 minute session. The children participate in three of these small group sessions each day.

The teacher presents material to the children in a very precise manner and then asks the children evaluative questions about the material she has just presented. Most tasks are made into learning games in order to challenge and motivate the children. Special attention is given to those children who have trouble staying on task. These children are taught how to stay on task and pay attention for extended periods of time. The teachers involved (three in each class) are trained to use a very positive approach in dealing with children in order to achieve more learning and better student attitudes about learning. The B-E Program has been operating for several years in other locations in the United States. Currently, it is being used in 20 different programs in 13 states. There are approximately 6,000 children in the program this year at all locations. The program has achieved great success with pre-school, kindergarten, first and second grade children in a variety of settings with many different types of children.

A recent report from one of the B-E Programs in Grand Rapids, Michigan is as follows (reported in the Grand Rapids Press, Oct. 19, 1969): Inner city children who were students for one school year in a structured Bereiter-Engelmann Program gained and maintained IQ averages about one year above the general population norm, during a two year study. The study followed the children for two years. At the end of kindergarten the children were approximately one full year above the total population; children in a competing "enrichment" program scored at age level and children from a control group were about two years behind the B-E children.



RAY PAGE
SUPERINTENDENT

State of Illinois
Office of the Superintendent of Public Instruction
Springfield 62706

February 25, 1970

*to
Dean
and file*

Mr. Dave Phillips
Project Supervisor
2102 East Washington
Urbana, Illinois 61801

Dear Dave:

Thank you for participating in the Tolono inservice education meeting held Friday, February 20, 1970 in the Tolono Schools.

I'm confident your presentation provided the people in attendance much insight concerning individualized instruction.

Again, thanks for your help.

Sincerely,

Dean S. Baker
Assistant Director
Title III, E.S.E.A.

DSB/gab

cc: Mr. Donald Hoste

APPENDIX 6

The Wide Range Achievement Test was used as a measure of progress for the Kindergarten children. In all three areas, reading, spelling and math, the kindergarten children made very substantial gains as reported in percentiles. If the Prairie Kindergarten children were learning at the same rate as the average child of the same age there would be no percentile gains. However the mean gains made reflect a much larger than average achievement gain.

APPENDIX 6

WIDE RANGE ACHIEVEMENT TEST

WIDE RANGE ACHIEVEMENT TEST

WIDE RANGE ACHIEVEMENT TEST

TEST	1	2	3	4
1	4	73	73	+69
2	30	72	72	+42
3	4	10	10	+6
4	35	7	7	-28
5	14	73	73	+59
6	72	72	72	+0
7	52	72	72	+20
8	37	47	47	+10
9	61	14	14	-47
10	1	14	14	+13
11	58	73	73	+15
12	4	53	53	+49
13	39	55	55	+16
14	2	12	12	+10
15	14	47	47	+33
16	20	61	61	+41
17	19	47	47	+28
18	14	30	30	+16
19	19	73	73	+54
20	2	72	72	+70
21	20	73	73	+53
22	1	12	12	+11
23	52	73	73	+21
24	40	37	37	-3
25	18	30	30	+12
26	14	34	34	+20
27	10	14	14	+4
28	52	68	68	+16
29	27	53	53	+26
30	61	53	53	-8
31	45	53	53	+8
32	82	73	73	+9
33	46	24	24	-22
34	50	70	70	+20
35	14	34	34	+20
36	82	58	58	-24
37	70	53	53	-17
38	53	53	53	+0
39	30	34	34	+4
40	58	53	53	-5

mean gain = 17.5

APPENDIX 6

WIDE RANGE ACHIEVEMENT TEST

KINDERGARTEN SPELLING

Percentiles

STUDENT	PRE	POST	DIFFERENCE
1	.01	27	+27
2	7	73	+66
3	2	14	+12
4	.01	10	+10
5	23	73	+50
6	2	79	+77
7	14	73	+59
8	14	53	+39
9	.01	53	+53
10	.5	2	+22
11	18	58	+40
12	.06	73	+72
13	3	45	+42
14	.7	45	+44
15	14	73	+59
16	11	73	+62
17	.7	73	+72
18	.7	45	+44
19	14	73	+59
20	4	73	+69
21	30	73	+43
22	10	39	+29
23	27	58	+31
24	53	34	-19
25	14	45	+31
26	27	45	+18
27	.4	39	+39
28	23	39	+16
29	10	53	+43
30	68	63	- 5
31	23	45	+22
32	14	79	+65
33	30	53	+23
34	70	87	+17
35	.01	53	+52
36	70	75	+ 5
37	.5	53	+52
38	23	58	+35
39	.4	45	+45
40	14	53	+39

mean gain = 38.6

APPENDIX 6

READ-ARITH-1000-1000-1000-1000

1000-1000-1000-1000

Percentiles

STUDENT	PRE	POST	DIFFERENCE
1	1	34	+33
2	66	75	+9
3	5	32	+27
4	30	53	+23
5	30	73	+43
6	70	53	-17
7	81	75	+13
8	19	39	+20
9	2	61	+59
10	1	39	+38
11	73	82	+9
12	2	53	+51
13	39	39	+0
14	14	23	+9
15	45	90	+45
16	70	82	+12
17	2	61	+59
18	1	53	+52
19	2	61	+59
20	70	90	+20
21	50	73	+23
22	4	34	+30
23	82	92	+10
24	73	63	-10
25	53	34	-19
26	53	34	-19
27	2	34	+32
28	82	92	+10
29	34	63	+29
30	53	63	+10
31	50	87	+37
32	50	98	+48
33	50	53	+3
34	45	90	+45
35	14	61	+47
36	90	97	+7
37	50	63	+13
38	50	53	+3
39	37	39	+2
40	37	53	+16

mean gain = 22.5